PART B

SOLAR - GEOPHYSICAL DATA

ISSUED
MAY 1963

U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

CRPL-F 225
PART B

NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

Issued
31 May 1963

SOLAR - GEOPHYSICAL DATA

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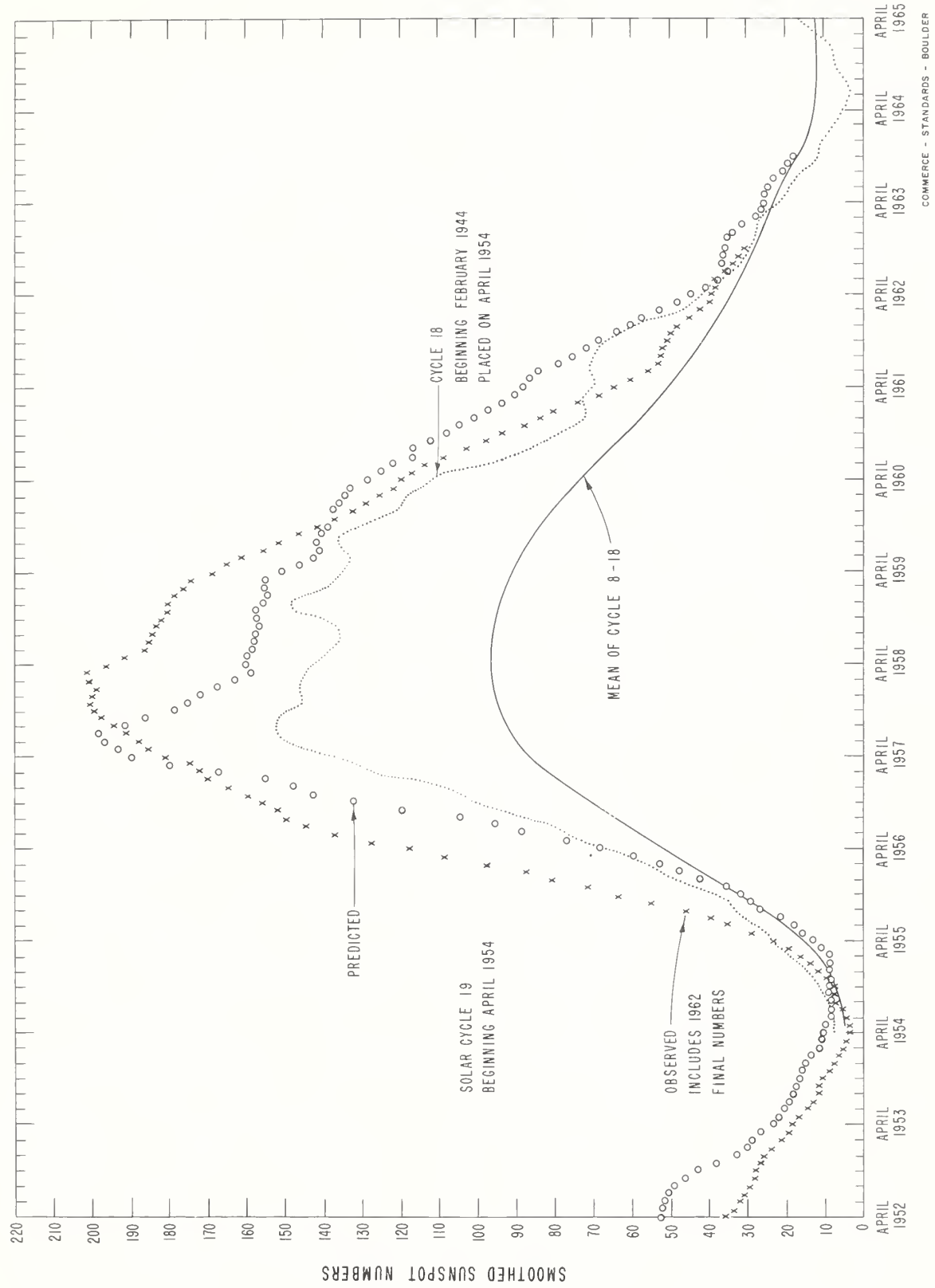
The text describing the contents of Part B was republished in November 1962. A revision was made December 1962, and an addenda January 1963.

DAILY SOLAR INDICES

Mar. 1963	American Relative Sunspot Numbers R_A'
1	0
2	0
3	4
4	12
5	15
6	21
7	20
8	19
9	19
10	19
11	25
12	24
13	21
14	3
15	8
16	11
17	12
18	13
19	12
20	13
21	13
22	11
23	10
24	12
25	11
26	11
27	11
28	0
29	15
30	15
31	18
Mean:	12.8

Apr. 1963	Zürich Provisional Relative Sunspot Numbers R_Z	Daily Values Solar Flux at 2800 Mc, Ottawa, Canada Flux
1	15	73
2	25	74
3	28	74
4	17	70
5	23	72
6	50	78
7	50	80
8	64	81
9	55	82
10	53	82
11	48	88
12	63	93
13	56	89
14	45	87
15	50	88
16	50	88
17	46	87
18	40	88
19	36	84
20	19	78
21	10	74
22	0	72
23	0	71
24	0	73
25	0	72
26	0	72
27	0	75
28	7	78
29	16	78
30	26	80
Mean:	29.7	79.4

COMMERCE - STANDARDS - BOULDER



PREDICTED AND OBSERVED SUNSPOT NUMBERS

CALCIUM PLAGE AND SUNSPOT REGIONS

APRIL 1963

CMP APRIL 1963	LAT.	MCMATH PLAGE NUMBER	RETURN OF REGION	CALCIUM PLAGE DATA						SUNSPOT DATA		
				CMP VALUES		HISTORY	AGE (ROTATIONS)	DATE FIRST SEEN	DURATION (DAYS)	CMP VALUES		HISTORY
				AREA	INT					AREA	COUNT	
01.4	S07	6754	New	1100	3.5	ℓ — ℓ	1	3/29	~10	440	3	b ⌒ ℓ
01.6	S21	6753	***	700	1.5	ℓ — ℓ	3	3/27	≈12			
02.9	S22	6761	*	400	1	b ⌒ d	1	4/1	1			
05.5	S26	6762	*	200	2	b ⌒ d	1	4/4	1			
05.7	S09	6758	New	500	2	ℓ ⌒ d	1	3/31	7	70	2	b ⌒ d
05.9	N12	6756	6724	2600	3.5	ℓ — ℓ	4,5	3/30	15	(40)	(2)	b ⌒ ℓ
05.9	N02	6763	New	400	3	b ⌒ ℓ	1	4/4	9	150	7	b ⌒ ℓ
07.2	N14	6759	6724	2600	3	ℓ — ℓ	4,5	3/30	15	570	13	b ⌒ ℓ
09.8	S10	6770	**	(300)	(2)	b ⌒ ℓ	1	4/12	3			
10.1	N14	6768	*	300	2	b ⌒ d	1	4/11	1			
10.2	S14	6765	+	300	1	ℓ ⌒ d	1	4/6	4			
10.4	S01	6764	New	200	1.5	ℓ ⌒ d	1	4/6	5			
11.8	N10	6772	New	(300)	(1.5)	b ⌒ ℓ	1	4/14	5			
14.8	S12	6766	New	2000	3.5	ℓ — ℓ	1	4/8	14	480	6	ℓ — ℓ
14.9	S19	6767	6734	1600	3	ℓ — ℓ	2	4/8	14	70	1	ℓ — ℓ
15.5	S01	6771	+	300	2.5	b ⌒ d	1	4/12	2			
16.8	S02	6773	*	200	1	b ⌒ d	1	4/15	1			
18.0	S09	6734	New	(500)	(2.5)	b ⌒ ℓ	1	4/24	1			
18.3	N15	6769	6730	2100	2.5	ℓ — ℓ	4	4/11	14			
19.9	S12	6785	*	(100)	(2)	b ⌒ ℓ	1	4/24	1			
21.0	N15	6776	+	200	2	b ⌒ d	1	4/20	3			
21.7	S11	6774	+	(200)	(1)	ℓ ⌒ d	1	4/17	2			
23.3	S12	6780	*	300	1.5	b ⌒ d	1	4/22	1			
23.3	N09	6775	New	300	2	ℓ — ℓ	1	4/16	13			
23.9	N07	6779	+	400	1	b ⌒ d	1	4/22	2			
24.2	N20	6777	*	(300)	(1.5)	ℓ ⌒ d	1	4/20	1			
24.5	N06	6783	+	300	1.5	b ⌒ d	1	4/23	2			
24.9	N04	6788	+	(200)	(1.5)	b ⌒ d	1	4/28	≈ 1			
25.7	N05	6778	New	700	1.5	ℓ ⌒ ℓ	1	4/20	≈10			
26.9	N19	6786	*	200	2	b ⌒ d	1	4/26	1			
28.2	N04	6781	+	(700)	(2)	ℓ ⌒ d	1	4/21	4			
29.2	S04	6782	6734	600	1.5	ℓ — d	2	4/22	≈ 7			
30.1	S04	6793	*	(200)	(2.5)	b ⌒ d	1	5/3	1			

COMMERCE - STANDARDS - BOULDER

* New - but small and ephemeral
** New - in position of 6731
*** 6715 and 6722
\+ New and ephemeral

MT. WILSON MAGNETIC CLASSIFICATIONS OF SUNSPOTS

APRIL 1963

Apr. 1963	Time Meas.	Lat.	Mer. Dist.	Type
1	No Obs.			
2	No Obs.			
3	1915	S04	W34	αf
4	No Obs.			
5	No Obs.			
6	1810	S05	W74	αf
		N02	W14	βf
		N15	E10	$\beta\gamma$
*		N01	E47	αp

COMMERCE - STANDARDS - BOULDER

* No further observations for the month due to renovation of the 150' Solar Tower.

FINAL CORONAL LINE EMISSION INDICES

OCTOBER 1962

CMP Oct 1962	North East Quadrant (observed 7 days earlier)				South East Quadrant (observed 7 days earlier)				South West Quadrant (observed 7 days later)				North West Quadrant (observed 7 days later)			
	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1
1	69	92	x	x	40	66	x	x	14	21	20	25	38	54	18	21
2	30	50	13	14	7	11	23	28	15	27	24	34	30	36	18	21
3	32	62	14a	17a	11	14	20a	30a	13	21	23	31	43	57	18	32
4	27	36	x	x	9	20	x	x	19	27	20	22	75	133	23	45
5	x	x	x	x	x	x	x	x	13	23	10	12	42	74	18	45
6	16	27	10	12	24	55	10	15	20	39	20a	25a	17	24	15a	19a
7	19	28	14	18	17	31	19	24	11	13	11	14	14	17	8	10
8	20	28	14	22	10	17	22	31	12	22	10	12	16	24	6	8
9	21	22	x	x	10	14	x	x	x	x	x	x	x	x	x	x
10	36	42	14	22	16	22	19	23	x	x	x	x	x	x	x	x
11	50	70	24	42	21	45	24	43	27	50	5	6	62	97	4	8
12	3	5	x	x	2	3	x	x	35	51	6	10	50	109	10	17
13	42	55	26	55	22	38	18	28	54	102	15	18	45	62	13	22
14	56	98	47	72	29	70	35	49	46	78	12	17	32	63	14	21
15	40	75	35	56	40	90	34	56	37	59	20	28	29	50	23	29
16	42	84	26	31	20	36	30	36	24	44	17	20	26	40	17	27
17	17	21	29	35	61	157	42	80	39	91	30	45	40	78	24	50
18	28	79	22	28	43	99	23	29	60	119	29	43	28	69	12	20
19	17	32	19	34	15	30	11	18	35	56	33	68	23	44	11	17
20	6	12	22a	26a	11	15	14a	16a	40	114	38	56	11	16	19	28
21	11	38	47	72	5	8	35	49	15	32	30	66	15	23	20	24
22	9	22	12	18	5	6	8	11	9	14	18	28	14	20	11	17
23	x	x	x	x	x	x	x	x	7	13	12	18	23	57	18	27
24	x	x	x	x	x	x	x	x	17	31	13	20	43	90	14	28
25	76	205	16	44	26	45	4	6	9	17	7	8	32	65	13	40
26	68	137	11	23	22	36	6	8	10	20	11	12	40	76	13	20
27	70	90	10	12	11	24	11	16	12	23	22	26	46	57	11	16
28	31	38	15	18	16	31	15	23	x	x	x	x	x	x	x	x
29	38	56	19	22	8	19	16	21	27	61	21	27	30	63	12	14
30	40	72	21	43	8	12	22	31	20	25	29	57	29	57	18	24
31	65	121	18	22	10	19	26	43	37	96	25	39	50	80	9	11

x = no observations * = yellow line emission a = index computed from low weight data

COMMERCE - STANDARDS - BOULDER

FINAL CORONAL LINE EMISSION INDICES

NOVEMBER 1962

CMP Nov 1962	North East Quadrant (observed 7 days earlier)				South East Quadrant (observed 7 days earlier)				South West Quadrant (observed 7 days later)				North West Quadrant (observed 7 days later)			
	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1
1	48	85	7	10	18	40	19	27	20	38	22	59	28	42	8	13
2	38	56	11	16	18	41	16	18	17	24	22	32	21	27	11	12
3	21	31	10	18	9	18	20	25	7	10	7	9	9	11	4	6
4	14	23	15	19	9	12	14	19	7	12	15	21	7	9	8	11
5	20	25	9	10	9	13	17	29	10	13	12	16	12	24	7	10
6	31	48	26	41	15	19	25	28	16	28	11	17	22	40	7	9
7	36	69	10	18	24	39	16	30	28	44	10	19	36	55	3	9
8	22	43	6	8	33	79	10	20	x	x	x	x	x	x	x	x
9	22	28	18	20	27	48	22	51	27	51	x	x	25	34	x	x
10	32	64	24	32	43	77	24	29	x	x	x	x	x	x	x	x
11	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
12	30	39	21	37	62	119	25	48	x	x	x	x	x	x	x	x
13	21	55	25	49	63	105	31	67	39	60	25	43	38	46	30	40
14	37	84	18	24	40	73	37	55	29	53	18	24	19	25	14	19
15	21	76	12	30	20	32	30	48	41	71	30	45	29	52	25	35
16	13	16	14	20	34	57	33	54	x	x	x	x	x	x	x	x
17	7	12	5	7	18	36	12	33	33	90	38	68	32	52	29	40
18	12	17	13	17	8	11	24	46	29	44	x	x	47	66	x	x
19	16	30	9	12	6	8	9	12	5	6	14	15	14	25	12	12
20	24	41	9	12	8	9	10	16	8	20	9	10	18	33	9	14
21	46	67	12	15	14	19	8	12	7	11	14	16	25	43	12	20
22	x	x	x	x	x	x	x	x	19	31	x	x	61	84	x	x
23	45	57	x	x	18	26	x	x	20	29	x	x	65	96	x	x
24	x	x	x	x	x	x	x	x	19	27	x	x	60	128	x	x
25	x	x	x	x	x	x	x	x	14	22	27	28	21	34	27	40
26	x	x	x	x	x	x	x	x	5	6	12	15	23	27	10	13
27	21	33	8	10	13	17	12	15	7	11	10	12	16	18	8	10
28	15	25	5	8	12	24	8	9	7	17	17	19	20	22	8	14
29	30	36	9	14	19	45	16	17	7	10	12	16	14	18	7	8
30	x	x	x	x	x	x	x	x	11	14	14	17	24	40	10	13

x = no observations * = yellow line emission a = index computed from low weight data

COMMERCE - STANDARDS - BOULDER

FINAL CORONAL LINE EMISSION INDICES

DECEMBER 1962

CMP Dec 1962	North East Quadrant (observed 7 days earlier)				South East Quadrant (observed 7 days earlier)				South West Quadrant (observed 7 days later)				North West Quadrant (observed 7 days later)			
	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1
1	32	72	27	60	12	19	29	46	7	12	15	20	22	45	19	36
2	80	144	x	x	32	62	x	x	10	22	12a	16a	40	53	14a	22a
3	13	20	13	20	13	15	13	15	9	16	13	19	15	27	12	22
4	12	24	8	14	13	19	13	18	x	x	x	x	x	x	x	x
5	15	28	10	12	17	40	18	25	17	22	x	x	22	42	x	x
6	57	81	x	x	64	93	x	x	17	31	23	28	14	28	26	36
7	32	40	x	x	32	45	x	x	16	22	16	16	13	17	25	38
8	29	39	x	x	39	48	x	x	26	39	17	21	16	25	25	61
9	37	64	47	77	31	45	34	64	30	64	20	24	27	45	22	40
10	84	128	30	53	55	73	15	35	25	50	x	x	20	25	x	x
11	63	103	x	x	44	61	x	x	x	x	x	x	x	x	x	x
12	34	56	25	28	30	50	19	29	20	40	7	11	9	11	8	14
13	20	42	19	34	19	30	22	44	x	x	x	x	x	x	x	x
14	29	64	10	15	20	38	13	22	20	48	11	15	15	26	7	10
15	19	28	17	28	12	16	10	16	x	x	x	x	x	x	x	x
16	11	17	12a	20a	7	11	12a	18a	4	6	10	12	21	31	10	13
17	8	12	10	16	1	3	10	16	x	x	x	x	x	x	x	x
18	x	x	x	x	x	x	x	x	9	12	5	12	36	57	8	21
19	25	39	x	x	5	8	x	x	x	x	x	x	x	x	x	x
20	44	92	28	45	11	17	19	28	5	8	26	28	34	48	26	41
21	40	104	24	30	5	8	18	25	5	11	x	x	18	31	x	x
22	32	87	25	31	3	6	13	16	2	6	14	16	13	16	11	12
23	27	34	11	12	5	8	13	18	6	8	13	16	10	14	7	10
24	10	15	x	x	2	3	x	x	4	6	7	10	12	16	7	10
25	x	x	x	x	x	x	x	x	5	8	17	20	16	20	8	10
26	9	10	5	5	3	8	6	8	x	x	x	x	x	x	x	x
27	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
28	13	24	8	17	8	30	9	13	7	12	13	25	12	26	10	10
29	x	x	x	x	x	x	x	x	14	22	13	15	15	20	5	6
30	20	34	12	15	10	22	10	11	21	53	30	36	13	17	11	14
31	x	x	x	x	x	x	x	x	33	87	22	24	12	22	16	20

x = no observations

* = yellow line emission

a = index computed from low weight data

FINAL CORONAL LINE EMISSION INDICES

JANUARY 1963

CMP Jan 1963	North East Quadrant (observed 7 days earlier)				South East Quadrant (observed 7 days earlier)				South West Quadrant (observed 7 days later)				North West Quadrant (observed 7 days later)			
	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1
1	28	39	1	1	12	18	3	6	12	22	x	x	15	34	x	x
2	x	x	x	x	x	x	x	x	5	8	8	10	5	10	11	20
3	12	17	25	33	14	45	29	82	x	x	x	x	x	x	x	x
4	8	11	x	x	16	39	x	x	17	22	7	10	21	31	15	27
5	11	16	16	25	16	28	13	17	24	30	8	10	24	29	12	17
6	14	22	15	18	18	45	17	21	x	x	x	x	x	x	x	x
7	16	28	12	16	14	20	12	24	10	22	x	x	7	10	x	x
8	21	48	24	45	21	34	17	22	8	16	10	10	9	22	10	15
9	25	53	x	x	22	42	x	x	7	20	11	15	6	7	9	14
10	x	x	x	x	x	x	x	x	9	20	11	20	5	6	7	10
11	7	12	14	20	6	16	17	20	x	x	x	x	x	x	x	x
12	12	22	6	15	8	17	10	19	x	x	x	x	x	x	x	x
13	26	64	18	28	5	8	19	26	5	6	10	12	28	45	12	26
14	31	53	21	52	6	8	19	24	5	13	7	9	17	36	13	21
15	47	95	15	45	6	11	10	13	x	x	x	x	x	x	x	x
16	28	57	18	40	3	8	9	15	6	6	11	14	36	70	10	16
17	x	x	x	x	x	x	x	x	9	21	15	17	9	18	11	15
18	32	41	5	12	10	15	7	10	4	7	7	8	8	9	6	7
19	53	74	7	12	13	18	9	14	4	5	10	13	8	12	8	11
20	x	x	x	x	x	x	x	x	3	4	10	12	6	8	7	10
21	8	8	x	x	4	4	x	x	8	10	x	x	19	23	x	x
22	7	8	7	10	3	3	13	17	2	4	12	20	8	9	7	9
23	10	13	8	15	4	5	12	17	3	6	9	13	7	10	7	10
24	11	19	6	7	4	9	9	10	13	28	5	7	28	43	4	7
25	x	x	x	x	x	x	x	x	11	24	12	16	16	26	12	18
26	11	14	x	x	7	17	x	x	x	x	x	x	x	x	x	x
27	20	23	5	8	15	32	9	11	6	10	8	12	10	15	7	7
28	5	8	6	8	2	4	11	15	3	6	14	17	5	6	11	15
29	x	x	x	x	x	x	x	x	3	3	12	15	4	5	11	16
30	10	14	17	25	7	11	14	20	6	11	3	11	10	20	0	0
31	9	14	12	20	9	16	19	30	4	8	9	11	5	16	9	12

x = no observations * = yellow line observed a = index computed from low weight data

COMMERCE - STANDARDS - BOULDER

FINAL CORONAL LINE EMISSION INDICES

FEBRUARY 1963

CMP Feb 1963	North East Quadrant (observed 7 days earlier)				South East Quadrant (observed 7 days earlier)				South West Quadrant (observed 7 days later)				North West Quadrant (observed 7 days later)			
	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1
1	11	23	9	12	14	34	11	17	12	25	6	8	11	14	9	15
2	11	18	13	19	7	18	14	25	18	23	4	6	15	22	5	7
3	9	21	17	30	5	6	9	10	11	14	x	x	4	6	x	x
4	23	46	x	x	14	17	x	x	x	x	x	x	x	x	x	x
5	5	7	14	15	5	8	16	25	43	87	x	x	9	14	x	x
6	4	5	12	15	5	11	14	29	8	14	x	x	3	4	x	x
7	15	18	4	5	14	24	4	6	8	12	8	12	10	14	10	14
8	14	28	10	20	4	5	7	10	x	x	x	x	x	x	x	x
9	30	68	x	x	12	16	x	x	12	17	x	x	19	23	x	x
10	19	40	14	35	4	8	7	9	7	11	3	10	37	48	4	12
11	16	34	15	22	3	5	10	12	14	40	7	8	9	18	6	6
12	16	37	10	18	2	3	8	9	x	x	x	x	x	x	x	x
13	14	20	2	7	x	x	2	7	2	4	11	15	5	6	5	8
14	5	8	6	7	1	3	10	12	2	3	8	10	3	4	7	7
15	15a	28a	5	6	1a	6a	8	9	5	8	x	x	8	14	x	x
16	17	19	3	7	9	12	4	5	3	4	6	8	3	4	5	12
17	8	11	x	x	2	3	x	x	1	2	6	7	4	4	4	5
18	x	x	x	x	x	x	x	x	1	4	8	10	4	4	5	5
19	14	17	x	x	6	11	x	x	3	5	5	5	6	8	6	12
20	4	5	x	x	4	8	x	x	2	4	6	7	12	17	7	11
21	19	45	14	19	2	2	10	12	7	9	13	13	39	51	16	28
22	x	x	x	x	x	x	x	x	2	3	5	6	13	21	4	7
23	67	125	11	27	9	17	5	18	27	38	3	4	16	20	5	6
24	45	87	9	20	8	10	5	12	x	x	x	x	x	x	x	x
25	4	5	7	9	4	4	8	10	5	7	x	x	0	0	x	x
26	x	x	x	x	x	x	x	x	3	6	x	x	11	17	x	x
27	3	3	11	15	2	3	9	10	x	x	x	x	x	x	x	x
28	3	4	9	10	3	3	6	7	6	8	6	7	8	14	6	7

x = no observations * = yellow line observed a = index computed from low weight data

COMMERCE - STANDARDS - BOULDER

FINAL CORONAL LINE EMISSION INDICES

MARCH 1963

CM Mar 1963	North East Quadrant (observed 7 days earlier)				South East Quadrant (observed 7 days earlier)				South West Quadrant (observed 7 days later)				North West Quadrant (observed 7 days later)			
	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1
1	7	11	x	x	5	8	x	x	x	x	41	52	x	x	35	50
2	2	3	7	10	3	4	5	7	13	17	17	28	8	11	13	16
3	2	6	11	20	4	8	12	20	14	20	x	x	9	10	x	x
4	3	10	8	9	9	14	6	9	6	8	6	10	5	6	6	6
5	2	4	8	9	7	11	5	6	x	x	x	x	x	x	x	x
6	3	5	4	10	5	8	5	7	x	x	x	x	x	x	x	x
7	20	33	6	10	21	32	8	14	11	20	11	15	26	45	15	20
8	8	12	2	3	3	4	3	5	x	x	x	x	x	x	x	x
9	27	38	5	10	15	20	4	5	x	x	x	x	x	x	x	x
10	x	x	x	x	x	x	x	x	10	30	6	14	34	62	14	46
11	73	121	x	x	6	10	x	x	21	37	x	x	72	87	x	x
12	30	42	x	x	3	6	x	x	5	8	16	20	25	36	9	10
13	x	x	x	x	x	x	x	x	5	8	10	14	18	31	5	8
14	17	25	6	12	5	8	5	7	3	6	22	26	17	39	12	14
15	14	17	24	36	x	x	22	28	6	17	24	30	8	11	13	18
16	11	14	12	16	5	6	12	13	8	36	36a	68a	7	11	22a	23a
17	11	15	2	14	10	12	4	8	6	9	22	32	8	9	6	10
18	4	5	5	8	4	4	6	7	8	28	40	65	15	20	13	16
19	x	x	x	x	x	x	x	x	3	6	20	32	29	34	18	40
20	x	x	x	x	x	x	x	x	6	9	8	11	37	48	8	18
21	48	76	40	90	5	6	15	18	5	20	x	x	62	82	x	x
22	x	x	x	x	x	x	x	x	10	25	22	28	41	73	29	52
23	x	x	x	x	x	x	x	x	5	6	16	20	24	45	18	24
24	14	20	14	22	3	5	9	12	x	x	x	x	x	x	x	x
25	34	39	x	x	13	15	x	x	x	x	x	x	x	x	x	x
26	7	8	8	10	5	8	9	10	x	x	x	x	x	x	x	x
27	8	11	7	11	6	11	6	8	6	8	15	16	3	6	20	28
28	6	8	18	24	7	8	15	28	x	x	x	x	x	x	x	x
29	6	8	22	28	5	6	12	28	x	x	x	x	x	x	x	x
30	5	8	24a	38a	8	11	19a	26a	x	x	x	x	x	x	x	x
31	5	10	20	24	11	18	12	16	x	x	x	x	x	x	x	x

x = no observations * = yellow line observed a = index computed from low weight data

COMMERCE - STANDARDS - BOULDER

PROVISIONAL CORONAL LINE EMISSION INDICES

APRIL 1963

CMP Apr 1963	North East Quadrant (observed 7 days earlier)				South East Quadrant (observed 7 days earlier)				South West Quadrant (observed 7 days later)				North West Quadrant (observed 7 days later)			
	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1
1	6	7	28	36	13	31	17	22	x	x	x	x	x	x	x	x
2	7	8	24	28	9	20	13	19	x	x	x	x	x	x	x	x
3	16	20	x	x	6	11	x	x	x	x	x	x	x	x	x	x
4	x	x	x	x	x	x	x	x	26	92	x	x	36	62	x	x
5	49	109	24	36	9	14	22	28	x	x	x	x	x	x	x	x
6	54	101	22	32	4	6	17	38	x	x	21	26	x	x	26	40
7	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
8	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
9	x	x	x	x	x	x	x	x	4	11	x	x	6	8	x	x
10	8	11	14	18	2	3	17	23	x	x	x	x	x	x	x	x
11	x	x	13a	20a	x	x	17a	28a	x	x	x	x	x	x	x	x
12	x	x	11	15	x	x	25	32	x	x	x	x	x	x	x	x
13	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
14	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
15	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
16	x	x	x	x	x	x	x	x	15	25	37	40	35	53	27	40
17	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
18	41	101	x	x	4	6	x	x	x	x	x	x	x	x	x	x
19	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
20	x	x	18	25	x	x	18	20	x	x	20	44	x	x	17	24
21	x	x	x	x	x	x	x	x	7	8	15	18	9	11	12	23
22	x	x	x	x	x*	x	x	x	4	5	19	23	5	7	17	27
23	7	8	x	x	1	3	x	x	x	x	x	x	x	x	x	x
24	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
25	x	x	x	x	x	x	x	x	4	6	19	22	5	7	21	30
26	x	x	x	x	x	x	x	x	x	x	20	26	x	x	20	28
27	x	x	x	x	x	x	x	x	10	14	20	22	9	11	21	24
28	x	x	x	x	x	x	x	x	10	14	15	24	12	20	15	24
29	x	x	x	x	x	x	x	x	11	17	20	36	8	11	17	24
30	10	14	12	20	6	11	14	18	x	x	x	x	x	x	x	x

x = no observations * = yellow line emission a = index computed from low weight data

SOLAR FLARES

APRIL 1963

OBSERVATORY	DATE APR 1963	OBSERVED UNIVERSAL TIME START	END	MAX PHASE	LOCATION APPROX LAT	MER DIST	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME U T	MEAS AREA Sq Deg.	CORR. AREA Sq Deg	MAX WIDTH Ha	MAX. INT. °	PROVISIONAL IONOSPHERIC EFFECT
	01	0000	0700	NO FLARE	PATROL											
	01	0725	0730	NO FLARE	PATROL											
	01	0745	0925	NO FLARE	PATROL											
	01	0955	1130	NO FLARE	PATROL											
	01	1155	1210	NO FLARE	PATROL											
OTTAWA	01	1240	1257	1246	N15	E61			1-	2	1246	1.00	1.60			
OTTAWA	01	1845	1909	1853	N14	E59			1-	2	1853	.76	1.10			
	01	1935	2235	NO FLARE	PATROL											
	01	2310	2400	NO FLARE	PATROL											
	02	0000	0605	NO FLARE	PATROL											
ATHENES	02	0855 E	0901		N13	E51	6756	6 D	1	2		1.50	2.50			
	02	1040	1045	NO FLARE	PATROL											
	02	1100	1110	NO FLARE	PATROL											
	02	1120	1225	NO FLARE	PATROL											
	02	1230	1245	NO FLARE	PATROL											
	03	0005	0635	NO FLARE	PATROL											
	03	0750	0755	NO FLARE	PATROL											
WENDEL	03	0758 E	0813 D		S07	W26			1-							
WENDEL	03	0907 E	0934 D		S07	W27	6754	27 D	1				3.00			
	03	0925	1005	NO FLARE	PATROL											
	03	1010	1040	NO FLARE	PATROL											
	03	1120	1125	NO FLARE	PATROL											
	03	1135	1140	NO FLARE	PATROL											
ATHENES	03	1218 E	1302		S05	W28			1-	3		1.10	1.30			
	03	1325	1345	NO FLARE	PATROL											
	04	0005	0530	NO FLARE	PATROL											
MCMATH	04	1419	1430	1420	N17	E20	6756		1-	1	1420	.20	.20			
MCMATH	04	2133	2155 D	2140	N15	E36	6759		1-	2	2140	.30	.40			
	04	2205	2210	NO FLARE	PATROL											
	04	2220	2245	NO FLARE	PATROL											
	04	2320	2340	NO FLARE	PATROL											
	04	2345	2400	NO FLARE	PATROL											
	05	0000	0600	NO FLARE	PATROL											
ATHENES	05	0647	0652		S01	E25			1-	2		.50	.60			
ATHENES	05	0724	0726		S06	W43			1-	2		.40	.50			
	05	0835	0840	NO FLARE	PATROL											
	05	0845	0850	NO FLARE	PATROL											
	05	0900	0925	NO FLARE	PATROL											
	05	0935	1030	NO FLARE	PATROL											
MCMATH	05	1902	2005 D		N15	E23	6759		1-	2	1910	.60	.80			
MCMATH	05	2105	2130	2110	N15	E22	6759		1-	2	2110	.40	.50			
MCMATH	05	2153	2220	2157	N15	E22	6759		1-	2	2157	.30	.40			
SAC PEAK	05	2339	2346	2341	N14	E20			1-	3		.56	.58		16	
	06	0000	0610	NO FLARE	PATROL											
BUCHAREST	06	0700 E	0911 D		N01	W08	6763	131 D	1	3						
BUCHAREST	06	0851 E	0953 D	0910	N15	E16			1-	3						

SOLAR FLARES

APRIL 1963

OBSERVATORY	DATE APR 1963	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT °.	PROVISIONAL IONOSPHERIC EFFECT
→ WENDEL	06	0904 E	0916 D		N14	E17			1-							
WENDEL	06	1006 E	1011 D		N03	W08			1-							
	06	1030	1105	NO FLARE	PATROL											
WENDEL	06	1045 E	1052 D		N13	E16			1-							
	06	1120	1130	NO FLARE	PATROL											
	06	1210	1215	NO FLARE	PATROL											
	06	1320	1400	NO FLARE	PATROL											
MCMATH	06	1400 E	1510		N15	E12	6759		1-	1	1405	1.20	1.30			
LOCKHEED	06	1943	1955	1945	N02	W18			1-	2	1945	.10	.10		20	
SAC PEAK	06	1944	1954	1950	N02	W08			1-	3		.14	.14		15	
MCMATH	06	2018	2035 D	2023	N01	E46	6764		1-	2	2023	.30	.40			
	07	0000	0530	NO FLARE	PATROL											
	07	0900	0950	NO FLARE	PATROL											
CAPRI-S	07	1006 E	1045 D		N12	W03	6759	39 D	1	1	1006	2.10	2.20			
MCMATH	07	1916	1935 D	1922	N12	W07	6759		1-	2	1922	.40	.40			
	07	1940	1950	NO FLARE	PATROL											
MCMATH	07	2149	2218		N11	E04	6759		1-	2	2200	.20	.20			
	08	0000	0530	NO FLARE	PATROL											
ONDREJOV	08	0703	0709	0704	N14	W13			1-	3	0704			2.20		
ATHENES	08	0820 E	0840 D		S22	E90			1-	3		.10	1.30			
SALTSJOBADN	08	1145 E	1245 D		S06	E90			1-	1						
CAPRI-S	08	1256 E	1340 D		S05	E85	6766	44 D	1	2	1300	1.00				
WENDEL	08	1446 E	1457 D		S12	E81			1-							
SAC PEAK	08	1500 U	1520	1514	N11	W06			1-	3		.14	.14		16	
CAPRI-S	08	1504 E	1609 D		S05	E85			1-	2	1505	.60				
WENDEL	08	1544 E	1608 D		S12	E80	6766	24 D	1				4.00			
	08	2020	2030	NO FLARE	PATROL											
	08	2245	2400	NO FLARE	PATROL											
	09	0000	0535	NO FLARE	PATROL											
ATHENES	09	0650	0651 D		N10	W16			1-	2		.10	.10			
ONDREJOV	09	0730	0736		S09	E73			1-	3	0730			2.40		
ONDREJOV	09	0946 E	1004		S09	E71			1-	3	0952			2.30		
MCMATH	09	1209	1217 D	1212	S08	E72	6766		1-	2	1212	.40	1.30			
OTTAWA	09	1209	1231		S08	E70			1-	2	1217	.93	1.80			
ONDREJOV	09	1216	1226		S09	E70	6766	10	1	3	1219			2.60		
MCMATH	09	1217	1228	1221	S08	E72	6766		1-	2	1221	.50	1.60			
SALTSJOBADN	09	1218 E	1240 D		S10	E68			1-	1		.80	2.00			
OTTAWA	09	1318	1338	1322	N18	W31			1-	2	1322	.70	.73			
MCMATH	09	1320	1337	1323	N18	W31	6759		1-	2	1323	.30	.40			
MCMATH	09	1512	1522	1514	S08	E69	6766		1-	2	1514	.30	.80			
MCMATH	09	1540	1545	1541	S08	E69	6766		1-	2	1541	.30	.80			
MCMATH	09	1558	1608	1602	S08	E69	6766		1-	2	1602	.30	.80			
SAC PEAK	09	1629 E	1635 D	1635 U	S10	E69			1-	3		.29	.52		16	
MCMATH	09	1630	1638	1634	S08	E68	6766		1-	2	1634	.20	.60			
MCMATH	09	1700	1712	1705	S08	E68	6766		1-	2	1705	.20	.60			
	09	1705	1730	NO FLARE	PATROL											
	09	1735	1805	NO FLARE	PATROL											
MCMATH	09	1755 E	1845 D		S08	E67	6766		1-	1	1813	.60	1.80			

SOLAR FLARES

APRIL 1963

OBSERVATORY	DATE APR 1963	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	M.MATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq Deg	MAX WIDTH Ha	MAX INT	PROVISIONAL IONOSPHERIC EFFECT
	09	1840	1845	NO FLARE	PATROL											
	09	1905	2010	NO FLARE	PATROL											
	09	2030	2035	NO FLARE	PATROL											
	09	2040	2055	NO FLARE	PATROL											
	09	2145	2400	NO FLARE	PATROL											
	10	0000	0545	NO FLARE	PATROL											
ISTANBUL	10	0730	0900 D		N15	W35	6759	90 D	2							
BUCHAREST	10	0735 E	0742 D		S10	E61			1-	3						
CAPRI-S	10	0740 E	0830 D	0753	N15	W40	6759	50 D	2	3	0753	4.50	6.50			
BUCHAREST	10	0742 E	0918 D	0952	N16	W35	6759	96 D	2	3						
BUCHAREST	10	1016 E	1040 D		N16	W35	6759	24 D	1	3						
MCMATH	10	1233	1237 D	1235	S08	E54	6766		1-	1	1235	.30	.50			
SAC PEAK	10	1733	1740	1737	N03	W66			1-	3		.29	.47		16	
MCMATH	10	1735	1741	1737	N02	W65	6763		1-	1	1737	.40	.90			
MCMATH	10	2021	2040	2024	N02	W71	6763		1-	1	2124	.30	.70			
	10	2100	2105	NO FLARE	PATROL											
	10	2115	2120	NO FLARE	PATROL											
	10	2205	2310	NO FLARE	PATROL											
	10	2320	2400	NO FLARE	PATROL											
	11	0000	0600	NO FLARE	PATROL											
ATHENES	11	0730	0735 D		N18	W48			1-	3		.50	.70			
	11	0735	0750	NO FLARE	PATROL											
	11	0830	0850	NO FLARE	PATROL											
	11	0910	0930	NO FLARE	PATROL											
BUCHAREST	11	0930 E			N17	W45	6759		1	3						
	11	0935	1145	NO FLARE	PATROL											
	11	1200	1235	NO FLARE	PATROL											
OTTAWA	11	1256	1311	1300	N11	W44			1-	2	1300	.76	.88			
MCMATH	11	1257	1312	1300	N11	W45	6759		1-	2	1300	.40	.60			
	11	1905	1940	NO FLARE	PATROL											
LOCKHEED	11	2327	2345	2336	N14	W53			1-	2	2336	.90	1.10		10	
SAC PEAK	11	2328	2348	2334	N16	W57			1-	3		1.32	1.96		19	
	11	2355	2400	NO FLARE	PATROL											
	12	0000	0630	NO FLARE	PATROL											
ATHENES	12	0646 E	0651		N16	W65			1-	3		.30	.70			
	12	0935	0940	NO FLARE	PATROL											
	12	0945	0955	NO FLARE	PATROL											
	12	1100	1105	NO FLARE	PATROL											
OTTAWA	12	1141	1223	1146	S12	E31	6766	42	1+	2	1146	4.60	4.70			
ATHENES	12	1500 E	1502		S08	E34			1-	3		.20	.30			
	12	2010	2025	NO FLARE	PATROL											
	12	2335	2400	NO FLARE	PATROL											
	13	0000	0600	NO FLARE	PATROL											
CAPRI-S	13	0630 E	0708 D	0630	N09	W78			1-	3	0630	1.70				
CAPRI-S	13	0721 E	0742 D	0722	N09	W78	6759	21 D	1	3	0722	1.40				
SAC PEAK	13	1443	1449	1445	S09	E17			1-	3		.56	.56		16	
SAC PEAK	13	1454	1501	1456	N12	W79			1-	3		.23	.31		16	

COMMERCE - STANDARDS - BOULDER

SOLAR FLARES

APRIL 1963

OBSERVATORY	DATE APR 1963	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR AREA Sq. Deg.	MAX WIDTH Hα	MAX INT. %	PROVISIONAL IONOSPHERIC EFFECT
LOCKHEED	13	2003	2008	2005	S10	E10			1-	2	2005	.20	.20		10	
LOCKHEED	13	2020	2030	2023	N19	W90			1-	2	2023	.10	.50		20	
	13	2025	2030	NO FLARE	PATROL											
	13	2105	2115	NO FLARE	PATROL											
	13	2125	2130	NO FLARE	PATROL											
	13	2135	2245	NO FLARE	PATROL											
	13	2255	2400	NO FLARE	PATROL											
	14	0000	0600	NO FLARE	PATROL											
MCMATH	14	1429	1535	1435	S11	E05	6766		1-	2	1435	.20	.20			
SAC PEAK	14	1509	1526	1521	S10	E05			1-	3		.29	.27		17	
HUANCAYO	14	1515	1540 D	1521	S10	E07			1-	1	1521	.20	.20	2.40		
SAC PEAK	14	1545 E	1548	1545	S11	E04			1-	3		.56	.58		16	
MCMATH	14	1545	1557	1546	S12	E04	6766		1-	2	1546	.30	.30			
SAC PEAK	14	1600	1610 D	1604	S10	E04			1-	3		.56	.54		16	
MCMATH	14	1601	1607 D	1603	S11	E04	6766		1-	1	1603	.20	.20			
	14	2005	2120	NO FLARE	PATROL											
	14	2140	2155	NO FLARE	PATROL											
	14	2225	2245	NO FLARE	PATROL											
	14	2255	2310	NO FLARE	PATROL											
	14	2345	2400	NO FLARE	PATROL											
	15	0000	0515	NO FLARE	PATROL											
ATHENES	15	0646	0651		S20	W11			1-	5		.50	.60			
ATHENES	15	0703	0805		S11	W06			1-	5		1.50	1.50			
CAPRI-S	15	0747 E	0843 D	0750	S13	W05	6766	56 D	1	3	0755	2.00	2.00			
ARCETRI	15	0753 E	0835 D		S08	W08	6766	42 D	1	3	0758	2.13	2.15			
ARCETRI	15	0925 E	0943 D		S09	W05			1-	3	0925	.39	.39			
CAPRI-S	15	1046 E	1054 D	1048	S13	W03			1-	3	1046	1.50	1.50			
WENDEL	15	1118 E	1143 D	1125	S12	W08	6766	25 D	2				8.00			
CAPRI-S	15	1125 E	1203 D	1130	S15	W07	6766	38 D	2	2	1128	5.00	5.00			S - SWF
MCMATH	15	1133 E	1230		S12	W07	6766	57 D	1	2	1133	3.00	3.00			
SAC PEAK	15	1359	1415	1410 U	S15	W08			1-	3		.29	.29		16	
MCMATH	15	1417	1450	1424	S12	W08	6766		1-	2	1424	1.10	1.10			
SAC PEAK	15	1418	1440	1420	S12	W09			1-	3		.76	.76		20	
SAC PEAK	15	1613	1713	1618	S11	W10	6766	60	2	3		7.69	7.69		28	
OTTAWA	15	1614	1648	1620	S09	W09	6766	34	2+	3	1620	11.90	11.90			
MCMATH	15	1614	1700	1618	S11	W09	6766	46	1+	2	1618	4.50	4.50			S - SWF
CAPRI-S	15	1616 E	1626 D	1619	S15	W08	6766	10 D	1	1	1619	3.00	3.00			
HUANCAYO	15	1621 E	1641	1621	S10	W08	6766	20 D	2	2	1621	5.30	5.30	5.30		
SAC PEAK	15	1718	1726	1721	S12	W10			1-	3		.29	.29		17	
MCMATH	15	1726	1746		S15	W08	6766		1-	2	1728	.30	.30			
SAC PEAK	15	1738	1800	1740	S12	W12			1-	3		1.11	1.11		18	
MCMATH	15	1739	1753	1740	S12	W11	6766		1-	2	1740	1.20	1.20			
SAC PEAK	15	1805	1815	1809	S11	W12			1-	3		.70	.70		18	
MCMATH	15	1807	1813	1809	S11	W12	6766		1-	2	1809	.40	.40			
SAC PEAK	15	1821	1835	1827	S12	W13			1-	3		.29	.29		17	
MCMATH	15	1822	1835	1825	S11	W13	6766		1-	2	1825	.20	.20			
MCMATH	15	2000	2010	2003	S11	W12	6766		1-	2	2003	.20	.20			
MCMATH	15	2202	2228	2209	S15	W12	6766		1-	2	2209	.30	.30			
	15	2350	2400	NO FLARE	PATROL											

SOLAR FLARES

APRIL 1963

OBSERVATORY	DATE APR 1963	OBSERVED UNIVERSAL TIME START	END	MAX PHASE	LOCATION APPROX LAT.	MER. DIST	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME U T	MEAS. AREA Sq Deg.	CORR AREA Sq Deg	MAX WIDTH Hα	MAX INT %	PROVISIONAL IONOSPHERIC EFFECT
	16	0000	0555	NO FLARE	PATROL											
WENDEL	16	0740 E	0747 D		S11	W16			1-							
WENDEL	16	0741 E	0750 D		S15	W17			1-							
WENDEL	16	0842 E	0853 D		S10	W16			1-							
WENDEL	16	0854 E	0905 D		S14	W18			1-							
WENDEL	16	0855	0920		S11	W22	6766	25	1				3.00			
ARCETRI	16	0915			S11	W22			1-	3	0915	.82	.89			
WENDEL	16	1024	1040		S14	W19	6766	16	1				3.00			
CAPRI-S	16	1343 E	1402 D		S11	W13			1-	2	1343	2.00				
SAC PEAK	16	1418	1425	1421	S11	W22			1-	3		.41	.41		16	
SAC PEAK	16	1640	1710	1651	S14	W22			1-	3		1.26	1.26		21	
OTTAWA	16	1643	1708		S15	W22			1-	2	1655	.70	.70			
HUANCAYO	16	1651 E	1709 D	1651	N16	W18			1-	1	1654	.50	.60	2.90		
SAC PEAK	16	2114	2126 U	2117 U	S16	W26			1-	2		.14	.14		16	
LOCKHEED	16	2116	2134	2122	S16	W24			1-	2	2122	.20	.20		20	
	16	2140	2220	NO FLARE	PATROL											
LOCKHEED	16	2241	2252	2244	S10	W28			1-	2	2244	.30	.30		10	
	16	2340	2400	NO FLARE	PATROL											
	17	0000	0600	NO FLARE	PATROL											
	17	0610	0620	NO FLARE	PATROL											
ATHENES	17	0645	0647 D		N10	W71			1-	2		.40	1.20			
WENDEL	17	0655 E	0702 D		S16	W27			1-							
WENDEL	17	0930	0951		S15	W30	6766	21	1				4.00			
ONDREJOV	17	0932 E	0939		S15	W30	6766	7 D	1	3	0932			2.10		
ARCETRI	17	0932	0950		S15	W28			1-	3	0932	1.39	1.59			
	17	1120	1300	NO FLARE	PATROL											
WENDEL	17	1306	1328		S12	W36	6766	22	1				4.00			
SAC PEAK	17	1308	1319	1309	S10	W40			1-	3		.97	1.05		18	
SAC PEAK	17	1411	1432	1413	S10	W40	6766	20	1	3		1.94	2.10		18	
CAPRI-S	17	1417 E	1428 D		S10	W35			1-	1	1417	.80	1.00			
SAC PEAK	17	1520	1530	1522	S11	W39			1-	3		.97	1.05		18	
CAPRI-S	17	1520 E	1533 D		S13	W35			1-	2	1523	1.50	1.80			
HUANCAYO	17	1521	1532	1522	S10	W36	6766	11	1	2	1524	1.80	2.20	3.10		
WENDEL	17	1524 E	1535 D		S12	W37	6766	11 D	1				4.00			
	17	1620	1630	NO FLARE	PATROL											
SAC PEAK	17	1820	1849	1822	S14	W36			1-	3		.21	.23		17	
MCMATH	17	1820	1852	1823	S15	W35	6766		1-	3	1823	.20	.20			
MCMATH	17	1900	1921 D	1903	S12	W38	6766		1-	2	1903	1.20	1.60			
LOCKHEED	17	1900	1930	1905	S11	W37			1-	2	1905	1.40	.10		20	SL-S-SWF
SAC PEAK	17	1902	1925	1905	S10	W40	6766	23	1	3		2.02	2.25		19	
SAC PEAK	17	2012	2026	2014	S15	W39			1-	3		.56	.60		16	
	17	2305	2400	NO FLARE	PATROL											
	18	0000	0500	NO FLARE	PATROL											
ISTANBUL	18	0905 E	0920 D		S08	W47			1-							
CAPRI-S	18	0909 E	0920 D	0909	S12	W43			1-	2	0910	1.00	1.40			
ATHENES	18	0914 E	0916 D		S11	W46			1-	3		.30	.50			
	18	1025	1035	NO FLARE	PATROL											
MCMATH	18	1136 E	1158	1138	S11	W44	6766		1-	2	1138	.40	.60			
MCMATH	18	1200	1210	1202	S12	W46	6766		1-	2	1202	.20	.20			

COMMERCE - STANDARDS - BOULDER

SOLAR FLARES

APRIL 1963

OBSERVATORY	DATE APR 1963	OBSERVED UNIVERSAL TIME START	END	MAX PHASE	LOCATION APPROX. LAT.	MER DIST	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME U T	MEAS. AREA Sq Deg.	CORR. AREA Sq Deg.	MAX WIDTH Hα	MAX INT. %	PROVISIONAL IONOSPHERIC EFFECT
SAC PEAK	18	1350	1405	1355	S20	W54			1-	3		.56	.78		16	
MCMATH	18	1350 E	1410 D	1355	S21	W54	6767		1-	1	1355	.40	.70			
SAC PEAK	18	1431	1438	1432	S09	W46			1-	3		.76	.89		17	
MCMATH	18	1547	1613	1551	S10	W46	6766		1-	2	1551	.30	.40			
HUANCAYO	18	1549	1555	1551	S15	W46	6766	6	1	2	1551	1.90	2.70			
MCMATH	18	1632	1636	1633	S16	W50	6766		1-	1	1633	.30	.40			
MCMATH	18	1710	1740	1713	S19	W50	6767		1-	1	1713	.20	.30			
MCMATH	18	1710	1740	1726	S19	W50			1-							
SAC PEAK	18	1837	1844	1841	S14	W49			1-	3		.56	.68		17	
OTTAWA	18	1837	1846	1841	S14	W47			1-	1	1841	.99	1.20			
MCMATH	18	1839	1847	1841	S14	W49	6766		1-	1	1841	.30	.40			
	18	2205	2400	NO FLARE	PATROL											
	19	0000	0510	NO FLARE	PATROL											
ATHENES	19	0632 E	0639		S20	W53			1-	2		.30	.40			
ATHENES	19	0646 E	0649		S08	W61			1-	2		.40	.80			
ATHENES	19	0648	0655 D		S12	W53			1-	2		.40	.70			
ATHENES	19	0735 E	0747		N09	E50			1-	2		.30	.70			
	19	0900	0920	NO FLARE	PATROL											
	19	0925	0935	NO FLARE	PATROL											
	19	1005	1015	NO FLARE	PATROL											
	19	1020	1025	NO FLARE	PATROL											
	19	1115	1120	NO FLARE	PATROL											
	19	1130	1230	NO FLARE	PATROL											
	19	1255	1300	NO FLARE	PATROL											
SAC PEAK	19	1428	1448	1438	S14	W59			1-	3		.29	.41		16	
SAC PEAK	19	1453	1507	1458	S10	W66			1-	3		.64	1.05		17	
SAC PEAK	19	1717	1735	1718	S10	W65			1-	3		.64	1.03		16	
SAC PEAK	19	1756	1837	1800	S10	W66	6766	41	1	3		3.07	4.99		21	SI-S-SWF
HUANCAYO	19	1800 E	1824	1804	S11	W64	6766	24 D	1+	2	1813	2.60	6.10	2.20		
	19	2050	2100	NO FLARE	PATROL											
SAC PEAK	19	2249	2320	2251	S10	W70			1-	2		.56	1.01		16	
	19	2340	2400	NO FLARE	PATROL											
	20	0000	0715	NO FLARE	PATROL											
	20	0725	0755	NO FLARE	PATROL											
ARCETRI	20	0754 E	0812 D		S12	W67	6766	18 D	1	3	0754	1.06	2.23			
ARCETRI	20	0850 E	0933 D		S12	W67			1-	2	0850	.65	1.37			
WENDEL	20	1002 E	1020 D		S12	W71	6766	18 D	1				3.00			
	20	1005	1140	NO FLARE	PATROL											
CAPRI-S	20	1205 E	1221 D	1215	S15	W72	6766	16 D	2	2	1214	3.00				
CAPRI-S	20	1429 E	1436 D		S15	W68			1-	2	1429	.80				
SAC PEAK	20	1501	1518	1507	S12	W79			1-	3		.56	1.40		17	
HUANCAYO	20	1507 E	1515 D	1507	S12	W74	6766	8 D	1	1	1511	1.50	4.50	3.90		
CAPRI-S	20	1508 E	1513 D		S15	W68			1-	2	1508	.80				
SAC PEAK	20	1707	1714	1711	S12	W85			1-	3		.21	.52		17	
	20	1715	1720	NO FLARE	PATROL											
SAC PEAK	20	1803	1809	1806	S11	W85			1-	3		.21	.52		16	
MCMATH	20	1940 E	1947 D		S14	W76	6766		1-	1	1941	.20	.70			
SAC PEAK	20	2323	2329	2325	S15	W77			1-	3		.41	.93		16	
	20	2340	2400	NO FLARE	PATROL											

SOLAR FLARES

APRIL 1963

OBSERVATORY	DATE APR 1963	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME - U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
	21	0000	0515	NO FLARE	PATROL											
	21	2340	2400	NO FLARE	PATROL											
	22	0000	0600	NO FLARE	PATROL											
	22	0615	0635	NO FLARE	PATROL											
	22	0640	0700	NO FLARE	PATROL											
	22	0705	0710	NO FLARE	PATROL											
	22	1005	1015	NO FLARE	PATROL											
	22	1030	1035	NO FLARE	PATROL											
	22	1040	1045	NO FLARE	PATROL											
	22	1635	1640	NO FLARE	PATROL											
	22	1905	2000	NO FLARE	PATROL											
	22	2010	2400	NO FLARE	PATROL											
	23	0000	0505	NO FLARE	PATROL											
	23	0520	0600	NO FLARE	PATROL											
	23	1225	1235	NO FLARE	PATROL											
	23	1240	1250	NO FLARE	PATROL											
	23	1255	1300	NO FLARE	PATROL											
	23	1320	1325	NO FLARE	PATROL											
	23	1745	1755	NO FLARE	PATROL											
	23	2050	2115	NO FLARE	PATROL											
	23	2335	2400	NO FLARE	PATROL											
	24	0000	0605	NO FLARE	PATROL											
ATHENES	24	0605 E	0640		S25	W74			1-	2		.50	1.80			
ATHENES	24	0624	0639		S33	W43			1-	2		.80	1.20			
	24	0900	0905	NO FLARE	PATROL											
	24	0915	1050	NO FLARE	PATROL											
	24	1940	2005	NO FLARE	PATROL											
	24	2015	2020	NO FLARE	PATROL											
	24	2030	2040	NO FLARE	PATROL											
	24	2250	2400	NO FLARE	PATROL											
	25	0000	0830	NO FLARE	PATROL											
	25	0835	0840	NO FLARE	PATROL											
	25	0910	0920	NO FLARE	PATROL											
	25	0925	0935	NO FLARE	PATROL											
	25	0940	0945	NO FLARE	PATROL											
	25	0950	0955	NO FLARE	PATROL											
	25	1000	1010	NO FLARE	PATROL											
	25	1040	1045	NO FLARE	PATROL											
	25	1740	1745	NO FLARE	PATROL											
	25	1855	1900	NO FLARE	PATROL											
	25	1905	1915	NO FLARE	PATROL											
	25	1925	1930	NO FLARE	PATROL											
	25	2040	2100	NO FLARE	PATROL											
	25	2205	2245	NO FLARE	PATROL											
	25	2305	2400	NO FLARE	PATROL											
	26	0000	0610	NO FLARE	PATROL											

SOLAR FLARES

APRIL 1963

OBSERVATORY	DATE APR 1963	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX LAT	MER DIST	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS AREA Sq Deg	CORR AREA Sq Deg	MAX WIDTH Ha	MAX INT °₀	PROVISIONAL IONOSPHERIC EFFECT
	26	0750	0800	NO FLARE	PATROL											
	26	0910	0920	NO FLARE	PATROL											
	26	0940	0955	NO FLARE	PATROL											
	26	1005	1010	NO FLARE	PATROL											
	26	1220	1310	NO FLARE	PATROL											
	26	1535	1545	NO FLARE	PATROL											
	26	1605	1615	NO FLARE	PATROL											
	26	1910	1915	NO FLARE	PATROL											
	26	1930	1935	NO FLARE	PATROL											
	26	1940	1945	NO FLARE	PATROL											
	26	2015	2020	NO FLARE	PATROL											
	26	2025	2055	NO FLARE	PATROL											
	26	2220	2230	NO FLARE	PATROL											
	26	2240	2400	NO FLARE	PATROL											
	27	0000	0600	NO FLARE	PATROL											
CAPRI-S	27	1305 E	1435 D		N20	E90			1-	3	1409	.50				
	27	1800	1805	NO FLARE	PATROL											
	27	1825	1830	NO FLARE	PATROL											
	27	1835	1845	NO FLARE	PATROL											
	27	1850	1855	NO FLARE	PATROL											
	27	2005	2115	NO FLARE	PATROL											
	27	2330	2400	NO FLARE	PATROL											
	28	0000	0600	NO FLARE	PATROL											
	28	2330	2400	NO FLARE	PATROL											
	29	0000	0600	NO FLARE	PATROL											
WENDEL	29	1353 E	1401 D		N15	E72			1-							
SAC PEAK	29	1416	1430 U	1422	N10	E36			1-	3		.35	.39		16	
SAC PEAK	29	1736	1745	1740	N17	E70			1-	3		.29	.60		16	
	29	1820	1830	NO FLARE	PATROL											
SAC PEAK	29	2313	2329 D	2323	N11	E29			1-	3		.50	.52		16	
	29	2330	2400	NO FLARE	PATROL											
	30	0000	0600	NO FLARE	PATROL											
LOCKHEED	30	0023	0034	0029	N17	E65			1-	1	0029	.30	.60		20	
CAPRI-S	30	0625 E	0736 D		N15	E65			1-	3	0719	1.00	2.00			
ARCETRI	30	0925	1005 D		N18	W62	6778	40 D	1	2	0950	1.23	2.37			
CAPRI-S	30	0947 E	1008 D		N15	E68			1-	2	0947	.50	1.00			
CAPRI-S	30	1142 E	1228 D	1150	N14	E59	6790	46 D	1	3	1148	1.20	2.90			
CAPRI-S	30	1229 E	1244 D	1230	N16	E62			1-	3	1235	.80	2.00			
LOCKHEED	30	1815	1830	1820	N18	E54			1-	1	1820	.30	.40		10	
	30	1935	2010	NO FLARE	PATROL											
	30	2105	2400	NO FLARE	PATROL											
LOCKHEED	30	2239	2257	2242	N09	E15			1-	2	2242	.40	.40		20	

SOLAR FLARES

APRIL 1963

ATHENES	ATHENS, GREECE	HONOLULU	HAWAII, USA	NERA	NEDERHORST den BERGH, NETHERLANDS
BAKOU	PIRCULI, USSR	IKOMASAN	KYOTO, JAPAN		
CAPETOWN	ROYAL OBSERVATORY, CAPE OF GOOD HOPE	KIEV KO	KIEV GAO, USSR	NIZMIR	KRASNAYA PAKHRA, USSR
		KIEV KY	KIEV UNIVERSITY, USSR	SAC PEAK	SACRAMENTO PEAK, N.MEX. USA
CAPRI F	CAPRI, ITALY (GERMAN)	LOCKHEED	LOS ANGELES, CALIF., USA	SALTSJÖBADEN	STOCKHOLM, SWEDEN
CAPRI S	CAPRI, ITALY (SWEDISH)	MCMATH	MCMATH-HULBERT PONTIAC, MICH., USA	SCHAUINS	SCHAUINSLAND, GFR
CRIMÉE	SIMEIZ, USSR			TACHKENT	TASHKENT, USSR
HERSTMONCEU	ROYAL GREENWICH OBSERVATORY, HERSTMONCEUX, ENGLAND	MOSCOU	MOSCOW-GAISH, USSR	WENDEL	WENDELSTEIN, GFR
HTR-PROVEN	HAUTE-PROVENCE	NEW SCHAUIN	FREIBURG, GFR		

ALL VALUES IN THE MAXIMUM INTENSITY COLUMN FOR SAC PEAK ARE ARBITRARY UNITS (0-40) AND FOR LOCKHEED ARE ARBITRARY UNITS (10-40), NOT PERCENT OF CONTINUOUS SPECTRUM.

SEE DESCRIPTIVE TEXT PUBLISHED NOVEMBER 1961 FOR DEFINITION OF CORRECTED AREA VALUES LISTED FOR CLIMAX, HAWAII, LOCKHEED AND SACRAMENTO PEAK.

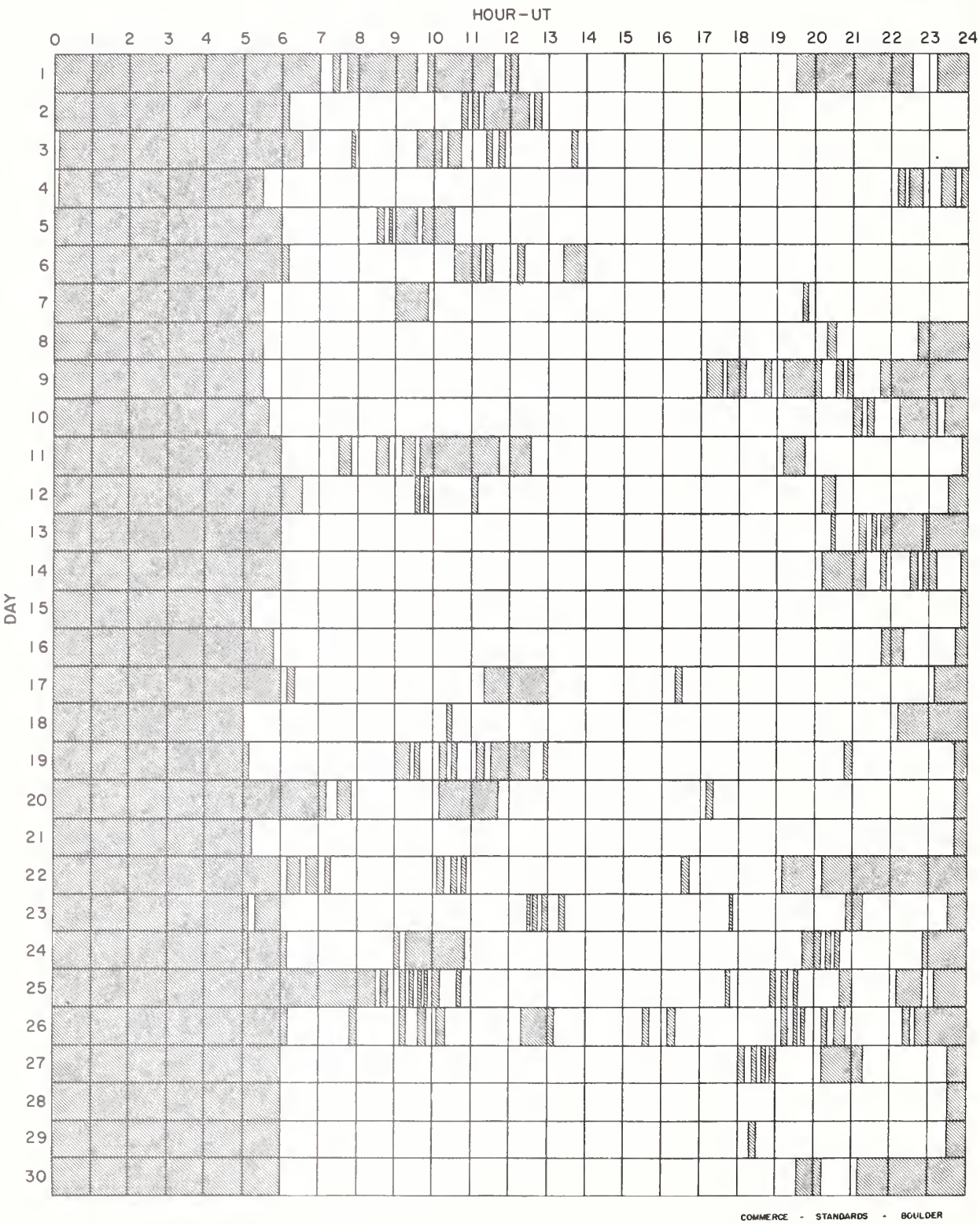
E = LESS THAN D = GREATER THAN U = APPROXIMATE □ = NOT REPORTED.

COMMERCE - STANDARDS - BOULDER

Note: Recently the WDC-A for Solar Activity received corrected data for the flare reports from Tachkent, U.S.S.R., for May, June, July and September 1961 and for January, February and March 1962. These corrections have been made on the punch cards and printouts are available on request.

INTERVALS OF NO FLARE PATROL OBSERVATIONS

APRIL 1963



Stations Include:

Arcetri	Bucharest	Huancayo	McMath-Hulbert	Ottawa
Athenes	Capri-S (Swedish)	Istanbul	Ondrejov	Sacramento Peak

SOLAR FLARES

JANUARY 1963

OBSERVATORY	DATE JAN 1963	OBSERVED UNIVERSAL TIME			LOCATION APPROX.		McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS					PROVISIONAL IONOSPHERIC EFFECT
		START	END	MAX. PHASE	LAT.	MER. DIST					TIME U T	MEAS AREA Sq. Deg.	CORR AREA Sq. Deg.	MAX. WIDTH Hα	MAX INT. %	
	01	0600	0610	NO FLARE	PATROL											
	01	0620	0645	NO FLARE	PATROL											
CAPETOWN	01	0734	0742	0736	S01	E59	6663		1-		0736	.80	1.60			
HTE-PROVEN	01	1052	1100		N00	E55			1-							
	01	1405	1420	NO FLARE	PATROL											
	01	1935	1940	NO FLARE	PATROL											
	01	2000	2005	NO FLARE	PATROL											
	01	2015	2400	NO FLARE	PATROL											
	02	0000	0005	NO FLARE	PATROL											
	02	0010	0015	NO FLARE	PATROL											
	02	1415	1435	NO FLARE	PATROL											
	02	2320	2400	NO FLARE	PATROL											
	03	0000	0005	NO FLARE	PATROL											
	03	0325	0350	NO FLARE	PATROL											
	03	0410	0900	NO FLARE	PATROL											
	03	1205	1350	NO FLARE	PATROL											
	03	1400	1410	NO FLARE	PATROL											
	03	1425	1430	NO FLARE	PATROL											
	03	1445	1450	NO FLARE	PATROL											
	03	1510	1655	NO FLARE	PATROL											
IKOMASAN	04	0030	0043 D		S05	W43			1-		0030	1.65			100	
	04	0325	0335	NO FLARE	PATROL											
	04	0340	0425	NO FLARE	PATROL											
	04	0430	0435	NO FLARE	PATROL											
	04	0440	0515	NO FLARE	PATROL											
	04	1125	1215	NO FLARE	PATROL											
	04	1515	1540	NO FLARE	PATROL											
	05	0240	0330	NO FLARE	PATROL											
	05	1420	1520	NO FLARE	PATROL											
	06	0200	0635	NO FLARE	PATROL											
CAPETOWN	06	0746	0809	0749	S06	E78		23	1		0749	.70				
	06	1330	1515	NO FLARE	PATROL											
	06	1535	1545	NO FLARE	PATROL											
	07	0305	0400	NO FLARE	PATROL											
	07	0500	0915	NO FLARE	PATROL											
	07	1040	1045	NO FLARE	PATROL											
	07	1225	1515	NO FLARE	PATROL											
	07	2310	2400	NO FLARE	PATROL											
	08	0000	0005	NO FLARE	PATROL											
	08	0035	0120	NO FLARE	PATROL											
	08	0200	0215	NO FLARE	PATROL											
	08	0225	0240	NO FLARE	PATROL											
	08	0305	0340	NO FLARE	PATROL											
	08	0435	0635	NO FLARE	PATROL											

SOLAR FLARES

JANUARY 1963

OBSERVATORY	DATE JAN 1963	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX LAT.	MER DIST	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME U T	MEAS AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX INT %	PROVISIONAL IONOSPHERIC EFFECT
	09	0230	0640	NO FLARE	PATROL											
	09	0730	0750	NO FLARE	PATROL											
	09	1410	1415	NO FLARE	PATROL											
	09	1440	1445	NO FLARE	PATROL											
	09	2215	2220	NO FLARE	PATROL											
	09	2230	2235	NO FLARE	PATROL											
	09	2345	2400	NO FLARE	PATROL											
	10	0000	0030	NO FLARE	PATROL											
	10	0315	0340	NO FLARE	PATROL											
	10	0345	0505	NO FLARE	PATROL											
	10	0925	0945	NO FLARE	PATROL											
HTE-PROVEN	10	0948	1000 D		N14	E80			1-							
HTE-PROVEN	10	1040	1043 D		N13	E70			1-							
HTE-PROVEN	10	1100	1123	1110	N13	E70			1-							
UCCLE	10	1111	1113 D	1111	N10	E80			1-	2	1111					
UCCLE	10	1150	1156		N12	E85			1-	2						
HTE-PROVEN	10	1212	1300		N13	E70			1-							
HTE-PROVEN	10	1231	1234 D		N14	E80			1-							
HTE-PROVEN	10	1315	1400	1332	N13	E70			1-							
	10	1420	1515	NO FLARE	PATROL											
	10	1530	1540	NO FLARE	PATROL											
	10	1545	1800	NO FLARE	PATROL											
	10	2010	2025	NO FLARE	PATROL											
	10	2030	2035	NO FLARE	PATROL											
	10	2055	2115	NO FLARE	PATROL											
LOCKHEED	10	2056 U	2034 U	2024 E	N09	E65			1-	1	2024	.40	.70		20	
	10	2125	2130	NO FLARE	PATROL											
	10	2235	2245	NO FLARE	PATROL											
	10	2250	2300	NO FLARE	PATROL											
LOCKHEED	10	2257	2305	2302 U	N08	E65			1-	1	2302	.30	.50		20	
	10	2305	2315	NO FLARE	PATROL											
	10	2325	2335	NO FLARE	PATROL											
	10	2350	2400	NO FLARE	PATROL											
	11	0000	0005	NO FLARE	PATROL											
	11	0045	0050	NO FLARE	PATROL											
	11	0115	0500	NO FLARE	PATROL											
CAPETOWN	11	1356	1357 D		N13	E68	6673	1 D	1		1357	1.20	3.40			
	11	1400	1635	NO FLARE	PATROL											
	11	1640	1645	NO FLARE	PATROL											
LOCKHEED	11	1728	1737 D	1733	N08	E57			1-	2	1733	.80	1.00		10	
LOCKHEED	11	2155	2210	2159	N12	E60			1-	1	2159	.30	.40		10	
	11	2300	2330	NO FLARE	PATROL											
	12	0005	0010	NO FLARE	PATROL											
	12	0310	0500	NO FLARE	PATROL											
HTE-PROVEN	12	1151	1154		N11	E45			1-							
HTE-PROVEN	12	1247	1251		N11	E45			1-							
HTE-PROVEN	12	1301	1310		N11	E45			1-							
	12	1510	1615	NO FLARE	PATROL											

SOLAR FLARES

JANUARY 1963

OBSERVATORY	DATE JAN 1963	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH He	MAX INT	PROVISIONAL IONOSPHERIC EFFECT
LOCKHEED	12	1620	1638	1627	N11	E54			1-	1	1627	.70	.80		10	
	12	1700	1725	NO FLARE	PATROL											
	12	1755	1800	NO FLARE	PATROL											
LOCKHEED	12	1846	1901	1850	N11	E41			1-	1	1850	.20	.20		20	
LOCKHEED	12	2326	2357	2330	N08	E32			1-	1	2342	.30	.30		20	
LOCKHEED	12	2326	2357	2342	N08	E32			1-							
	13	0400	0450	NO FLARE	PATROL											
HTE-PROVEN	13	1308	1315		N05	E37			1-							
LOCKHEED	13	1600 E	1626	1600 U	N07	E34			1-	1	1600	.80	.80		10	
	14	0300	0305	NO FLARE	PATROL											
	14	0310	0350	NO FLARE	PATROL											
HTE-PROVEN	14	1012 E	1029 D		N08	E21			1-							
HTE-PROVEN	14	1123	1127	1124	N08	E21			1-							
LOCKHEED	14	2252	2306	2256	N11	E11			1-	1	2256	.20	.20		10	
TACHKENT	15	0510 E	0533	0517	N12	E16	6673	23 D	1	2	0517	2.09	2.30		84	
HTE-PROVEN	15	0807 E	0830		N12	E07			1-							
HTE-PROVEN	15	0839	0913	0845	N10	E08			1-							
HTE-PROVEN	15	1227	1247		N13	E13			1-							
LOCARNO	15	1235	1245		N10	E04	6673	10	1	3						
HTE-PROVEN	15	1239	1247		N12	E07			1-							
HTE-PROVEN	15	1313	1323		N08	E06			1-							
LOCARNO	15	1350	1415		N10	E03	6673	25	1	3						
HTE-PROVEN	15	1358	1411		N12	E07			1-							
LOCKHEED	15	1700 E	1734	1710	N13	E09			1-	2	1710	.50	.50		20	
LOCKHEED	15	1739	1755	1743	N13	E02			1-	2	1743	1.00	1.00		20	
LOCKHEED	15	1928	2002	1942	N13	E08			1-	2	1942	.80	.80		20	
LOCKHEED	15	2248	2304	2251	N13	W02			1-	2	2251	.60	.60		20	
LOCKHEED	15	2346	2357	2352	N12	E06			1-	2	2352	.60	.60		10	
LOCKHEED	15	2352	0007	2357	N11	W01			1-	2	2357	.30	.30		10	
HTE-PROVEN	16	0925	0956		N05	W08			1-							
	16	1010	1020	NO FLARE	PATROL											
	16	1030	1155	NO FLARE	PATROL											
HTE-PROVEN	16	1155	1219 D		N05	W08			1-							
	16	1220	1235	NO FLARE	PATROL											
LOCKHEED	16	1807	1832	1813	N08	W12			1-	2	1813	.20	.20		20	
LOCKHEED	16	2310	2321	2314	N10	W11			1-	2	2314	.20	.20		10	
UCCLE	17	1250	1306	1254	N14	W19			1-	3	1254					
LOCKHEED	17	2248	2305	2251	N05	W29			1-	2	2251	.20	.20		20	
LOCKHEED	17	2321	2341	2328	N14	W22			1-	2	2328	.50	.50		20	
	18	1455	1500	NO FLARE	PATROL											
	18	1600	1650	NO FLARE	PATROL											
	18	2325	2335	NO FLARE	PATROL											
	18	2345	2350	NO FLARE	PATROL											
	19	0110	0120	NO FLARE	PATROL											

SOLAR FLARES

JANUARY 1963

OBSERVATORY	DATE JAN 1963	OBSERVED UNIVERSAL TIME START	END	MAX PHASE	LOCATION APPROX. LAT.	MER DIST	M.MATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME U T	MEAS AREA Sq Deg	CORR. AREA Sq Deg	MAX WIDTH Hα	MAX INT. %	PROVISIONAL IONOSPHERIC EFFECT
	19	0150	0200	NO FLARE	PATROL											
	19	1435	1445	NO FLARE	PATROL											
	19	1450	1500	NO FLARE	PATROL											
	19	1510	1545	NO FLARE	PATROL											
	19	1610	1630	NO FLARE	PATROL											
	19	1650	1655	NO FLARE	PATROL											
LOCKHEED	19	2006	2021	2012	N07	W56			1-	1	2012	.50	.60		10	
	20	1510	1530	NO FLARE	PATROL											
CAPETOWN	21	0749	0805	0751	N07	W74	6673	16	1		0751	1.00				
LOCKHEED	21	1618	1644	1624	N05	W69			1-	2	1624	.30	.50		20	
LOCKHEED	24	2032	2041	2035	S08	E41			1-	2	2035	.10	.10		10	
LOCKHEED	24	2234	2304	2250	N12	E02			1-	1	2250	.20	.20		20	
	25	0325	0330	NO FLARE	PATROL											
	25	2250	2355	NO FLARE	PATROL											
	26	1350	1405	NO FLARE	PATROL											
	26	2245	2400	NO FLARE	PATROL											
HTE-PROVEN	27	1217 E	1225 D		N04	E63			1-							
	28	0145	0150	NO FLARE	PATROL											
	28	2025	2050	NO FLARE	PATROL											
	28	2245	2250	NO FLARE	PATROL											
	28	2315	2340	NO FLARE	PATROL											
	29	0120	0130	NO FLARE	PATROL											
	29	2240	2245	NO FLARE	PATROL											
	29	2300	2400	NO FLARE	PATROL											
	30	0000	0205	NO FLARE	PATROL											
	30	0545	0555	NO FLARE	PATROL											
CAPETOWN	30	0630 E	0644		N12	W52	6680		1-		0631	.70	1.20			
CAPETOWN	30	1007 E	1035		N12	W54	6680	28 D	1		1010	1.30	2.30			
CAPETOWN	30	1303	1343 D	1306	N12	W54	6680	40 D	1		1306	1.20	2.30			
HTE-PROVEN	30	1320 E	1415		N10	W55	6680	55 D	1			2.10	3.80			
LOCARNO	30	1400 E	1500 D		N10	W57	6680	60 D	2	2	1400		12.00			
	30	1455	1500	NO FLARE	PATROL											
	30	2245	2325	NO FLARE	PATROL											
	30	2340	2345	NO FLARE	PATROL											
	31	0530	0540	NO FLARE	PATROL											
	31	0545	0555	NO FLARE	PATROL											
	31	0600	0605	NO FLARE	PATROL											
UCCLE	31	1112	1122	1119	N13	W73			1-	3	1119					
UCCLE	31	1202	1220		N13	W73			1-	3						
UCCLE	31	1237	1253		N13	W74			1-	3						
UCCLE	31	1320	1353	1323	N13	W74			1-	3	1323					

SOLAR FLARES

JANUARY 1963

OBSERVATORY	DATE JAN 1963	OBSERVED UNIVERSAL TIME			LOCATION APPROX.		McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS					PROVISIONAL IONOSPHERIC EFFECT
		START	END	MAX PHASE	LAT.	MER. DIST					TIME U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX INT. %	
UCCLE	31 31	1357 2235	1412 2400	NO FLARE	N13	W74 PATROL			1-	3						

These flare reports are addenda to the January 1963 flares published in CRPL-F 222B for February 1963.

ATHENES	ATHENS, GREECE	HONOLULU	HAWAII, USA	NERA	NEDERHORST den BERGH, NETHERLANDS
BAKOU	PIRCULI, USSR	IKOMASAN	KYOTO, JAPAN	NIZMIR	KRASNAYA PAKHRA, USSR
CAPETOWN	ROYAL OBSERVATORY, CAPE OF GOOD HOPE	KIEV KO	KIEV GAO, USSR	SAC PEAK	SACRAMENTO PEAK, N.MEX. USA
CAPRI F	CAPRI, ITALY (GERMAN)	KIEV KY	KIEV UNIVERSITY, USSR	SALTSJÖBADEN	STOCKHOLM, SWEDEN
CAPRI S	CAPRI, ITALY (SWEDISH)	LOCKHEED	LOS ANGELES, CALIF., USA	SCHAUINS	SCHAUINSLAND, GFR
CRIMÉE	SIMEIZ, USSR	MCMATH	MCMATH-HULBERT PONTIAC, MICH., USA	TACHKENT	TASHKENT, USSR
HERSTMONCEU	ROYAL GREENWICH OBSERVATORY, HERSTMONCEUX, ENGLAND	MOSCOU	MOSCOW-GAISH, USSR	WENDEL	WENDELSTEIN, GFR
HTE-PROVEN	HAUTE-PROVENCE	NEW SCHAUIN	FREIBURG, GFR		

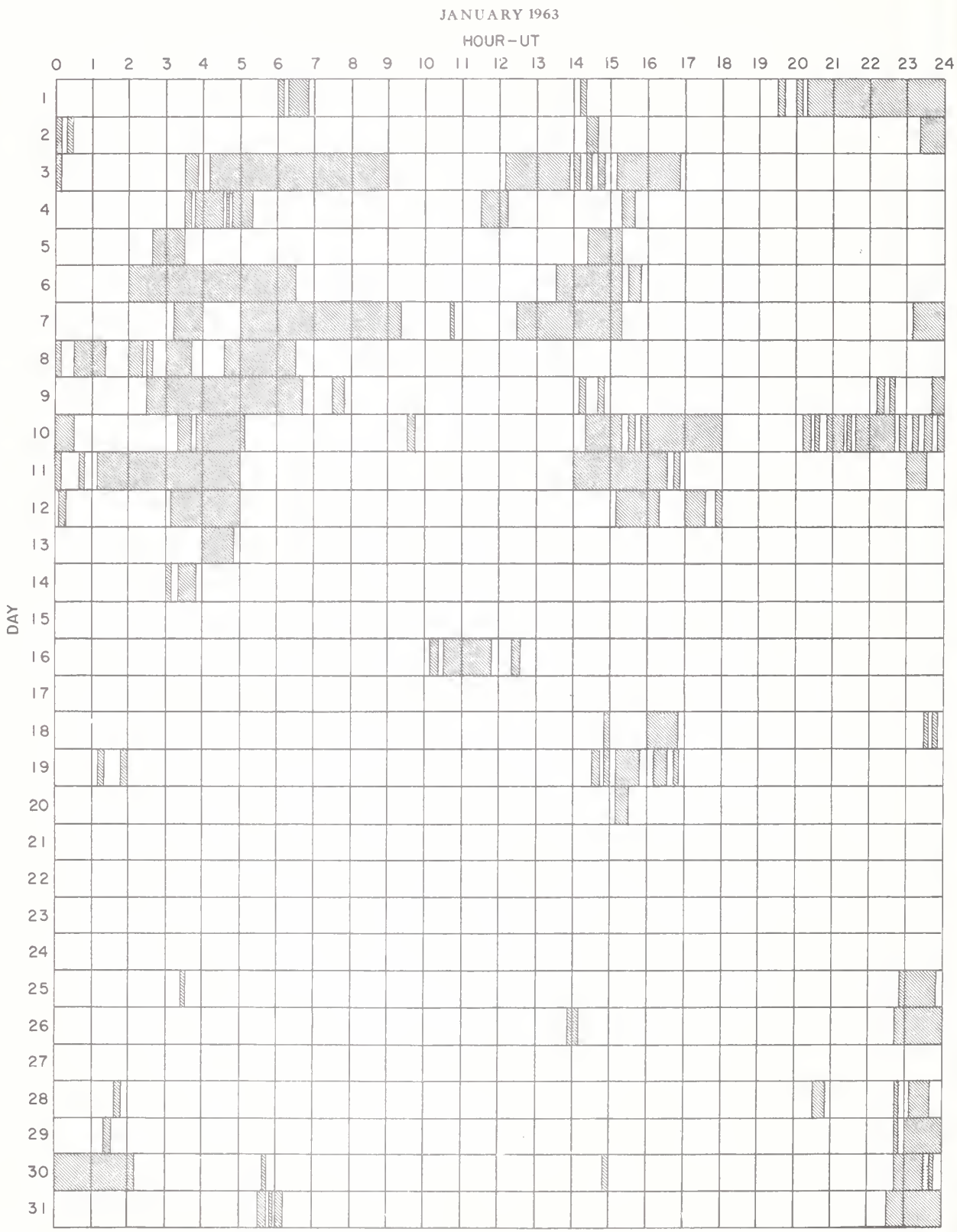
ALL VALUES IN THE MAXIMUM INTENSITY COLUMN FOR SAC PEAK ARE ARBITRARY UNITS (0-40) AND FOR LOCKHEED ARE ARBITRARY UNITS (10-40), NOT PERCENT OF CONTINUOUS SPECTRUM.

SEE DESCRIPTIVE TEXT PUBLISHED NOVEMBER 1961 FOR DEFINITION OF CORRECTED AREA VALUES LISTED FOR CLIMAX, HAWAII, LOCKHEED AND SACRAMENTO PEAK.

E = LESS THAN D = GREATER THAN U = APPROXIMATE □ = NOT REPORTED.

COMMERCE - STANDARDS - BOULDER

INTERVALS OF NO FLARE PATROL OBSERVATIONS



Stations Include:

Abastumani	Capri -F (German)	Honolulu	Lockheed	Nizmir
Arcetri	Capri -S (Swedish)	Huancayo	McMath-Hulbert	Ottawa
Athenes	Climax	Ikomasan	Meudon	Sacramento Peak
Bakou	Crimee	Kiev KO	Mitaka	Tachkent
Capetown	Haute-Provence	Kodaikanal	Nizamiah	Uccle

IONOSPHERIC EFFECTS OF SOLAR FLARES

SHORT WAVE RADIO FADEOUTS
SUDDEN COSMIC NOISE ABSORPTION
SUDDEN ENHANCEMENTS OF ATMOSPHERICS
SUDDEN PHASE ANOMALIES
SOLAR NOISE BURSTS AT 18 Mc

MARCH 1963

MARCH 1963	UNIVERSAL TIME			SWF TYPE IMP	IMPORTANCE					WIDE SPREAD INDEX	STATIONS	KNOWN FLARE
	START	END	MAX		ABS	SCNA	SEA	SPA	BUR			
20	2151	2153							1	5	MC BO HA	2150

COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES
APRIL 1963

ARO - OTTAWA **2800 Mc.**

APRIL 1963	TYPE	START UT	DURATION HRS MIN	MAXIMUM TIME UT	MAXIMUM PEAK FLUX	MAXIMUM MEAN FLUX	REMARKS
11	3 Simple 3	2040	40	2052	2	1	
12	3 Simple 3 A	1141	27.5	1151.5	3	1.5	
	1 Simple 1 f	1143.8	4.2	1144.7	6	3.5	
15	- Record Incomplete A	b1110	>1 50	1138	7	-	
	2 Simple 2 f	1123	9	1124.5	220	40	
	2 Simple 2	1144.5	13.5	1150	12	6.5	
15	3 Simple 3 A	1357	2 03	1448	3	2	
	1 Simple 1	1418	1	1418.3	2	1	
15	3 Simple 3 f	1615	1 35	1617	7	3.7	
15	1 Simple 1	2202.3	0.8	2202.5	3.5	2	
16	3 Simple 3 A	1637	33	Indet.	2	1	
	2 Simple 2 f	1642.5	3	1644	11	3	
	2 Simple 2 f	1649	3	1649.3	22	7	
17	3 Simple 3	1308	17	1310	2	1	
17	3 Simple 3	1410	25	1412	4	2	
17	1 Simple 1	1832	0.3	1832.2	2	1	
17	2 Simple 2	1902	3	1903.1	21	9	
	4 Post Increase		1 10		2	1	
19	3 Simple 3	1135	11	1139	2	1	
19	3 Simple 3 f	1443	37	1446	2	1	
19	2 Simple 2 f	1755	11.5	1158.7	92	14	
	4 Post Increase		45.5		6	3	
19	3 Simple 3	2143	>1 32	Indet.	4*	-	
28	3 Simple 3	1139	28	1148	2	1	
29	1 Simple 1	2216	7	2221	2	1	
30	3 Simple 3 A	1137	35	1152	3	1.5	
	2 Simple 2 f	1142.2	7.8	1145	8	4	
30	2 Simple 1	1416	2	1417	2	1	

COMMERCE - STANDARDS - BOULDER

*Maximum flux observed during this period.

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATIONS

APRIL 1963

BOEING - SEATTLE 221 Mc.

Apr. 1963	Type	Starting time UT	Time of max. UT	Duration minutes	Flux density 10^{-22} wm^{-2} (c/s)$^{-1}$ peak	mean
6	ef	2336.1	2336.1	0.2	40	10.5
9	es	0042.3	0042.3	0.5	25	7.5
10	ec	1949.7	1949.8	0.8	28	8.0
14	es	0054.2	0054.2	0.2	25	7.5
16	c	1643.0	1643.7	1.5	25	7.5
16	EC	1649.0	1649.2	3	1860	250
17	es	2113.2	2113.2	0.3	640	98

Normal observing period: 1600-0100 UT.

SOLAR RADIO EMISSION

OUTSTANDING OCCURRENCES

APRIL 1963

BOULDER 108 Mc.

April 1963	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity
12	7	1401	1430	90	2
12	7	1727	1825	153	2
16	3	1643.0	1643.8	1.8	3
16	8	1648	~1650	11.0	3
17	3	1819.4	1820.0	1.7	3
17	3	1830.5	1832.8	2.5	3
18	6	1223E	-	298D	2
18	8	1839.2	~1840	2.5	3
19	8	1426.5	1428.0	5.0	2
19	8	1432.0	1436.5	5.5	3
20	3	2322.5	2323.0	1.7	2

NOMINAL TIMES OF OBSERVATION

OUTSTANDING OCCURRENCES

APRIL 1963

BOULDER 108 Mc.

April 1963	U.T.			April 1963	U.T.		
1	1250-0109			17	1225-0104		
2	1248-0110	I	1808-2004	18	1223-0124		
			2026-2039	19	1300-0125	I	2343-2349
			2101-2116	20	1220-1715		
3	1246-2115				2045-0126		
	2235-0111			21	1219-1505		
4	1245-0112				1650-1714		
5	1243-2303				1730-1912		
6	1242-0113				1919-1950		
7	1240-1728				1954-2130		
	1807-0114			22	1907-0128		
8	1239-0115			23	1216-0129		
9	1237-0116	I	0043-0116	24	1215-2228		
10	1235-0117			25	2200-0131		
11	1234-0117			26	1212-0132		
12	1232-0118			27	1211-0132		
13	1231-2145			28	1209-0133		
	2340-0119			29	1208-0134		
14	1229-0120			30	1207-0135		
15	1228-2015						
16	1226-1915						
	2005-0122						

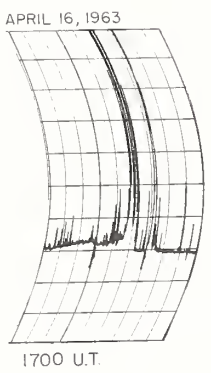
COMMERCE - STANDARDS - BOULDER

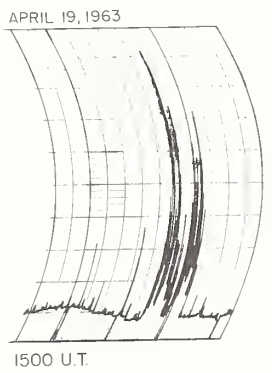
SOLAR NOISE BURSTS

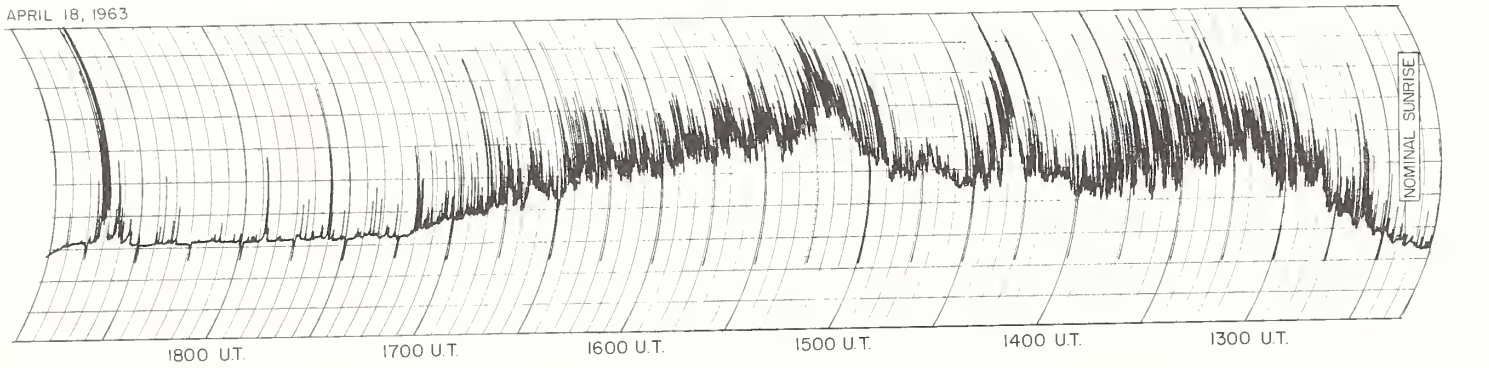
APRIL 1963

BOULDER

108 Mc.







COMMERCE · STANDARDS · BOULDER

PAI

SOLAR RADIO EMISSION SPECTRUM OBSERVATIONS

Fort Davis JANUARY — FEBRUARY 1963 **50-320 Mc.**

1963	OBSERVING HOURS	IMPORTANT BURSTS			FREQUENCY RANGE MC	REMARKS
		TYPE	TIMES U.T	INT		
Jan. 1	1415-2350					
Jan. 2	1415-2350					
Jan. 3	1415-2350					
Jan. 4	1415-2350					
Jan. 5	1415-2350					
Jan. 6	1415-2350					
Jan. 7	1415-2355					
Jan. 8	1415-2355					
Jan. 9	1415-2355					
Jan.10	1415-2355					
Jan.11	1415-2355					
Jan.12	1415-2355					
Jan.13	1415-2355					
Jan.14	1415-2355					
Jan.15	1415-2355	IIIG	1619-1622	1-2	320-100	
Jan.16	1415-2355					
Jan.17	1415-2355					
Jan.18	1415-2355					
Jan.19	1415-2355					
Jan.20	1415-2400					
Jan.21	1415-2400					
Jan.22	1415-2400					
Jan.23	1415-2400					
Jan.24	1415-2400					
Jan.25	1400-2400					
Jan.26	1400-2400					
Jan.27	1400-2400					
Jan.28	1400-2400					Weak I throughout day
Jan.29	1400-2400					
Jan.30	1400-2400	I	1409-1640	1	200-<50	
Jan.31	1400-2400					Weak I during day
Feb. 1	1400-2400					
Feb. 2	1400-2400					
Feb. 3	1400-2400					
Feb. 4	1400-2400					
Feb. 5	1400-1600					
Feb. 6	1400-2330					
Feb. 7	1400-2400					
Feb. 8	1400-2400	IIIG	2339-2340	2	240-<50	
Feb. 9	1400-2400					
Feb.10	1400-2400					
Feb.11	1400-2400					
Feb.12	1400-2400					
Feb.13	1400-2400					
Feb.14	1400-2400					
Feb.15	1400-2400					
Feb.16	1400-2400					
Feb.17	1400-2400					
Feb.18	1400-2400					Weak I during day
Feb.19	1400-2400					

COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION SPECTRUM OBSERVATIONS

FEBRUARY — MARCH 1963

Fort Davis

50 - 320 Mc.

1963	OBSERVING HOURS	IMPORTANT BURSTS			FREQUENCY RANGE MC	REMARKS
		TYPE	TIMES U.T	INT		
Feb.20	1400-2400					
Feb.21	1400-2400					
Feb.22	1345-2400					
Feb.23	1345-2400					
Feb.24	1345-2400					
Feb.25	1345-2400					
Feb.26	1345-2400					
Feb.27	1345-2400					
Feb.28	1345-2400					
Mar. 1	1400-2400					
Mar. 2	1400-2400					
Mar. 3	1400-2400	II	2350.0-2353	1	140-<50	
Mar. 4	1526-2400					
Mar. 5	1330-2330					
Mar. 6	1330-2330					
Mar. 7	1330-2330					
Mar. 8	1330-2330					
Mar. 9	1330-2330					
Mar.10	1330-2330					
Mar.11	1330-2330					
Mar.12	1330-2330					
Mar.13	1330-2330					
Mar.14	1330-2330					
Mar.15	1330-2330					
Mar.16	1330-2330					
Mar.17	1330-2330					
Mar.18	1330-2330					
Mar.19	1330-2330					
Mar.20	1330-2330	IIIG	2151-2152	2	220-<50	
Mar.21	1330-2330					
Mar.22	1330-2330					
Mar.23	1330-2330					
Mar.24	1330-2330					
Mar.25	1330-2330					
Mar.26	1330-2330					
Mar.27	1330-2330					
Mar.28	1330-2330					
Mar.29	1330-2330					
Mar.30	1330-2249					
Mar.31	1330-2330					

COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION SPECTRUM OBSERVATIONS

APRIL 1963

HAO BOULDER 7.6 - 41 Mc.

Date 1963	Bursts			Frequency Range (mc)
	Type	Time (U.T.)	Intensity	
1 Apr	III	2147.45-2148.15	1	32-41
3	III	2253.45-2254	1-	20-41
4	No Observ.	2100-2157		
5	III	2146.45-2147.30	1	16-41
	III	2147.45-2148	1-	27-37
	III	2149.30-2150	1-	21-36
6	III	d 1912.45-1913.45	1-	7-35
	III	2123.45-2125	1	7-41
7	III	1726-1726.30	1-	24-40
	III	1739.15-1739.30	1-	24-35
	III	1740.30-1741.15	1-	19-35
	III	1800.30-1801	1	19-41
	III	1807-1808	1+	7-41
	III	1816.30-1819	1-	22-41
	III	1820-1821.15	1+	7-41
	III	1821.30-1822	1	7-41
	III	1843-1844.30	1-	7-41
	III	1844.45-1846	1+	7-41
	III	1846-1846.15	1	16-41
	III	1847-1848	1+	7-41
	III	1849.45-1850.30	1-	22-41
	III	1924.45-1925	1-	20-41
	III	1938.45-1939.15	1	12-41
	III	2113-2113.15	1	16-41
	III	2228.45-2229	1-	21-39
	continuum	2306-a2450	1-	22-41
8	continuum	b1507-a2450	1-	20-41
	III	2240.45-2241.30	1	11-41
	III	2241.30-2243	1	11-41
	III	2442.30-2444.15	1	20-41
9	continuum	1930-2105	1-	25-41
	III	1942.15-1943	1-	22-41
	III	2100.45-2101	1-	22-41
	III	2144-2144.30	1-	22-41
	III	2158.45-2159	1	21-41
	III	2401.15-2402	1	22-41
10	III	1842.45-1843	1-	31-41
	III	1933-1934.45	1+	7-41
	III	1949.30-1951	1+	7-41
	III	2047.45-2048.15	1-	23-36
	III	2122.45-2123.45	1+	16-41
	III	2222.15-2222.45	1	16-41
	III	2237.15-2237.30	1-	22-34
	III	2239-2239.15	1-	22-34
	III	2239.45-2240.30	1+	12-41
	III	2252.15-2252.30	1-	20-41
	III	2306.30-2307	1	21-41
	III	2323-2323.30	1-	22-38
	III	2329.15-2332	1-	21-41
	III	2335-2336.45	1	13-41
	III	2346-2346.45	1	16-41
	III	2404-2404.45	1-	21-41
	III	2407.45-2408.15	1-	20-41
	III	2445.15-2445.45	1-	19-35

Date 1963	Bursts			Frequency Range (mc)
	Type	Time (U.T.)	Intensity	
11	III	1608-1608.30	1-	19-41
	III	1615.15-1618	2	7-41
	III	1641.30-1643.45	2	19-41
	III	1645.30-1646	1-	21-36
	III	1656.15-1656.45	1-	21-31
	III	1657.30-1658	1-	23-38
	III	1703.15-1703.45	1	20-28
	III	1707.30-1708	1-	24-41
	III	1711-1712.15	1-	30-41
	III	1728.30-1730	1	18-41
	III	1735.15-1737	1+	7-41
	continuum	1805-2135	1-	21-41
	III	1838.15-1839	1	21-41
	III	2032.15-2033.15	1	11-41
	III	2329.15-2329.45	1-	21-41
12	continuum	1725-1900	1-	24-41
12 Apr	III	1734.30-1735	1	21-41
	III	1739.15-1739.30	1	22-41
	III	2011.15-2011.30	1-	22-36
	III	2037.30-2038	1	21-41
	III	2457.30-2458	1-	20-41
13	continuum	b1542-a2459	1-	20-41
	III	1635.45-1636.45	1+	20-41
	III	1659.30-1702.45	1+	7-41
14	continuum	b1527-a2500	1+	18-41
	III	1731.15-1732.45	1+	7-41
	III	1743-1744.45	1+	7-41
15	No Observ.	1619-1638		
	continuum	b1638-a2500	1-	19-41
	III	1720.15-1721.45	1+	8-41
16	continuum	b1529-a2520	1+	19-41
	III	1641.30-1645.30	2+	7-41
	III	1648-1653.30	2+	7-41
	IV	1703-1755	1	18-41
17	continuum	b1440-a2520	1-	16-41
	III	1539.45-1541.30	1+	7-41
	III	1615-1617.45	1+	7-41
	III	1819.15-1821.15	1+	7-41
	III	1831.45-1833.15	1+	7-41
	III	1834.45-1835.15	1+	7-41
	III	2053-2054	1+	7-41
	III	2240.45-2242.15	1+	7-41
	III	2247.30-2248.45	1+	7-41
18	continuum	b1337-a2500	1-	19-41
	III	1641.15-1645.30	2	7-41
	III	1735.30-1736.30	1+	7-41
	III	1753.15-1754.30	1+	7-41
	III	1839.15-1842.15	1+	7-41
	III	1918.30-1920	1+	7-41
	III	2301.15-2304.30	1+	7-41
19	continuum	b1507.30-a2500	1-	22-41
	III	1522-1523	1-	16-35
	III	1532.45-1533.30	1-	22-36

SOLAR RADIO EMISSION SPECTRUM OBSERVATIONS

APRIL 1963

HAO BOULDER

7.6 - 41 Mc.

Date 1963	Bursts			Frequency Range (mc)	Date 1963	Bursts			Frequency Range (mc)
	Type	Time (U.T.)	Intensity			Type	Time (U.T.)	Intensity	
	III	1538.45-1539.15	1-	21-35		III	2109.30-2109.45	1-	16-41
	III	1710.45-1712	1	7-41		III	2127.15-2127.30	1-	22-41
	III	1720-1721	1-	7-41		III	2215.45-2216	1-	21-38
						III	2322.15-2325.15	1+	16-41
	III	1722.45-1723.15	1-	21-41	21	III	2342.15-2342.45	1-	23-41
	III	1857.15-1859.15	1+	7-41					
	III	1904-1905.45	1+	7-41		III	2437.45-2438	1-	23-41
	III	1924.15-1925	1-	7-41	24	II	2005.15-2029	1+	22-41
	III	2341.15-2351.15	2+	12-41		IV	2030-2118	1-	23-41
					25	III	2321.15-2322	1-	16-41
20	III	1603.15-1604.15	1	16-41		III	2329-2329.45	1-	21-41
	III	1605.45-1606.15	1-	16-41					
	III	1609.15-1610.15	1	22-41	28	III	1720.15-1721.15	1	13-41
	III	1625.15-1625.45	1-	12-41		III	1957.45-1958	1-	22-41
	III	1653.15-1653.45	1	7-41	29	III	2315.30-2316	1-	21-41
					30	No observ.	1507-1553		
	III	1702.30-1703.45	1	12-41		No observ.	1727-1853		
	III	1736-1736.15	1	7-41		III	2236-2242	1	21-41
	III	1816.45-1819.45	1-	9-41					
	continuum	1905-2020	1-	22-41					
	III	2048.15-2049	1-	16-41					

COMMERCE - STANDARDS - BOULDER

c = many faint Type III's not reported

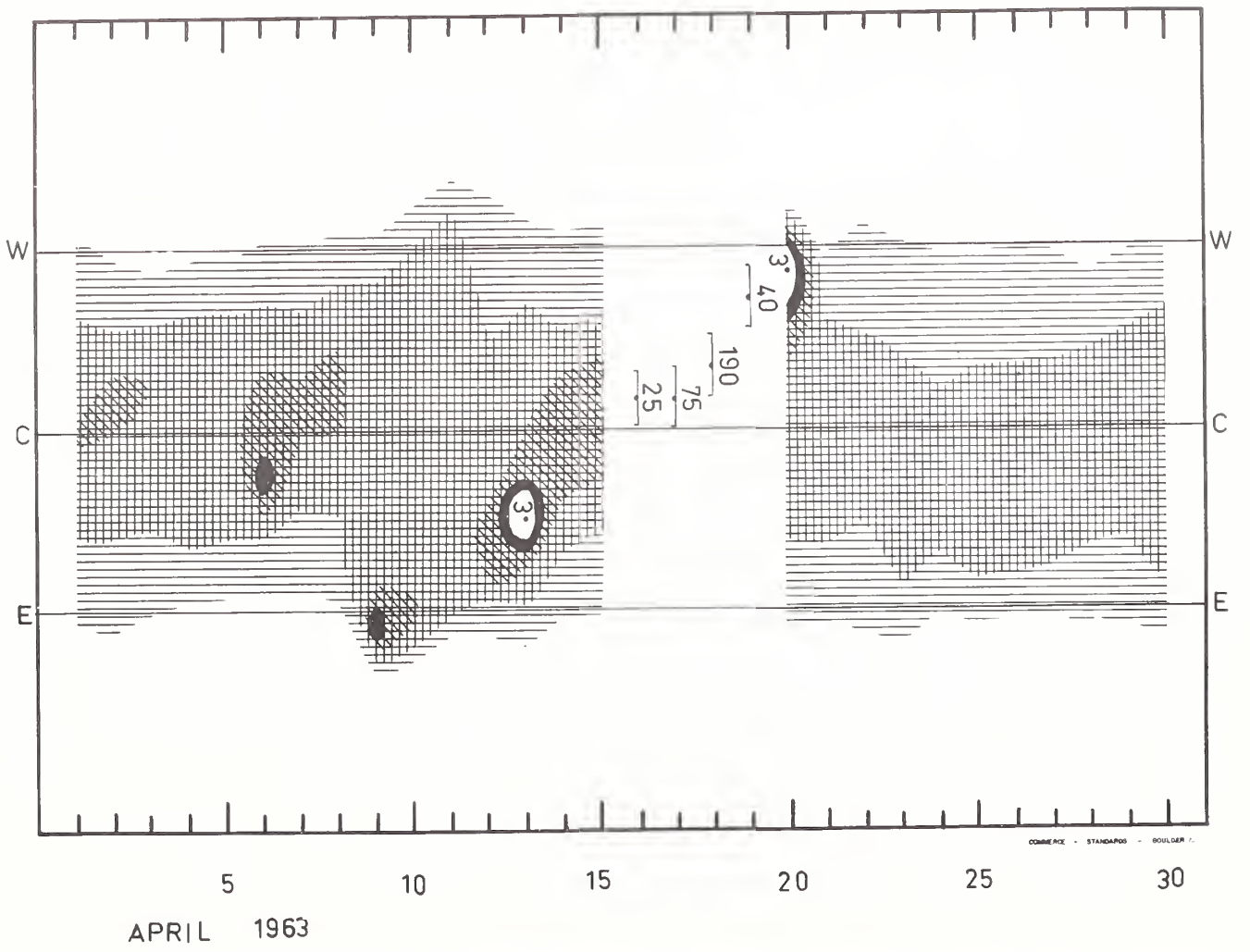
d = harmonic structure

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATIONS

APRIL 1963

NANÇAY

169 Mc.

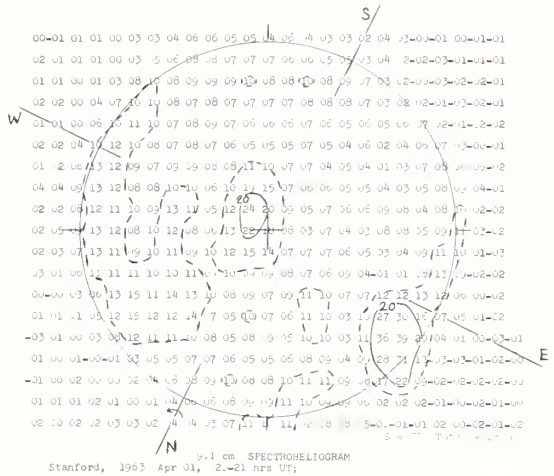


SOLAR RADIO EMISSION SPECTROHELIOGRAMS

APRIL 1963

STANFORD

9.1 cm



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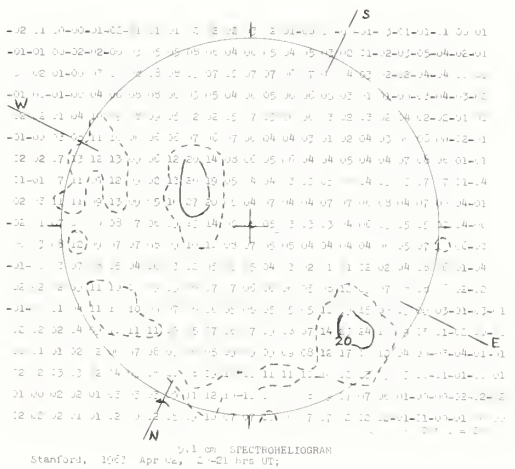

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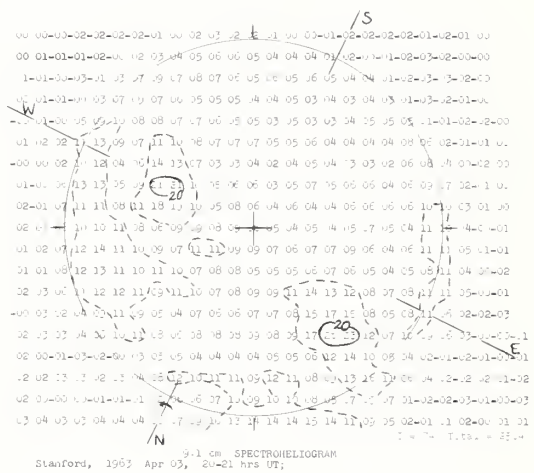

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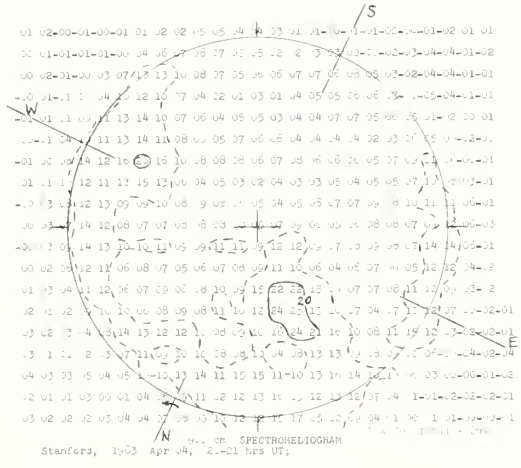

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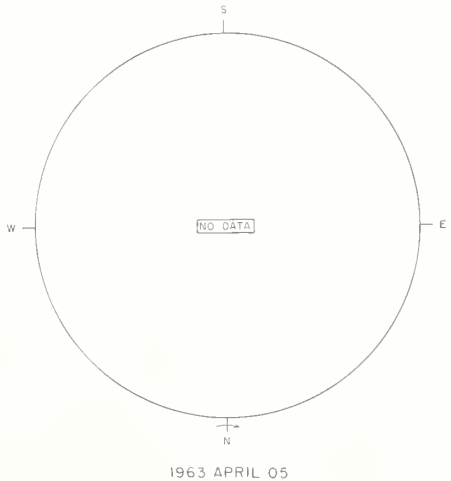
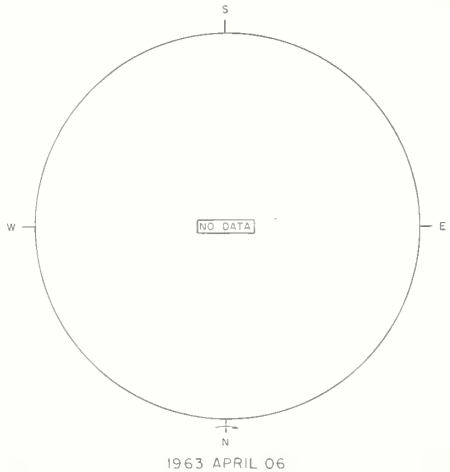


1963 APRIL 05



1963 APRIL 06

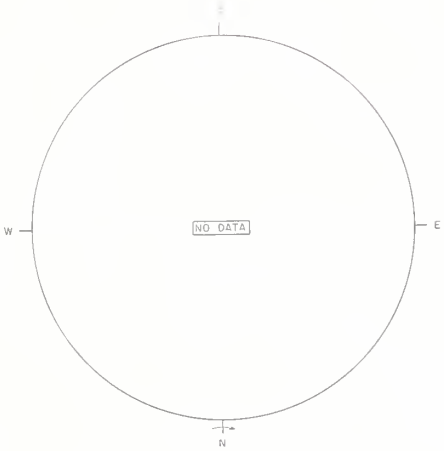
IV1

SOLAR RADIO EMISSION SPECTROHELIOGRAMS

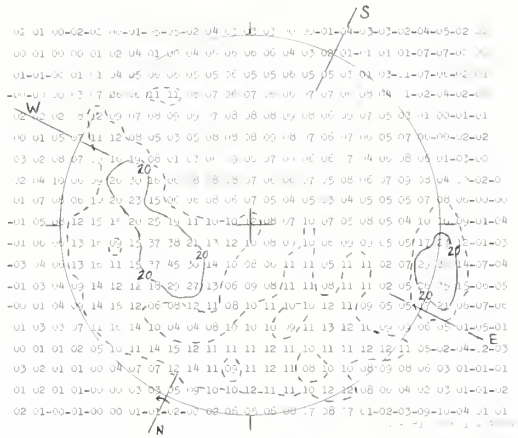
APRIL 1963

STANFORD

9.1 cm



1963 APRIL 07



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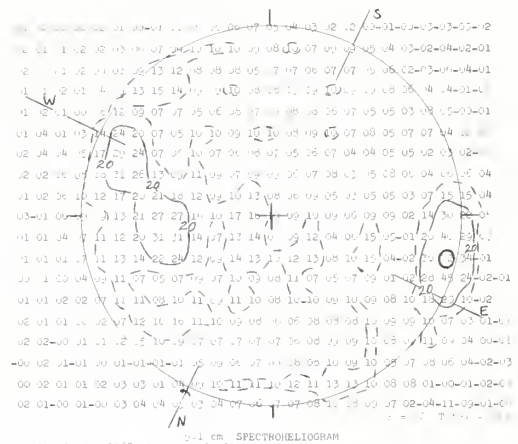

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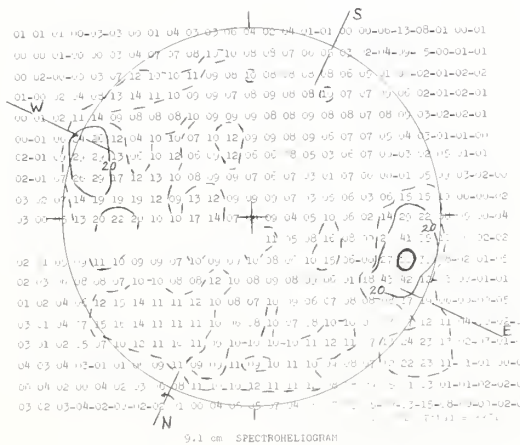

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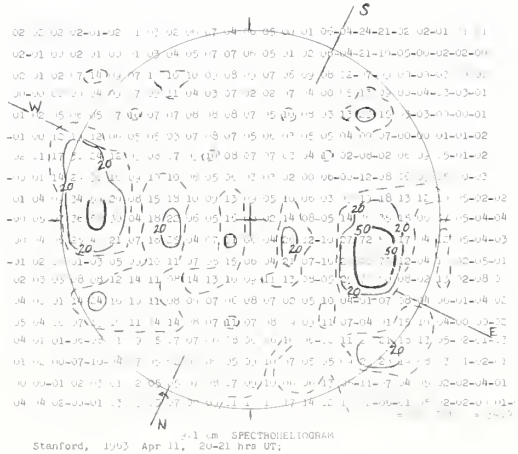

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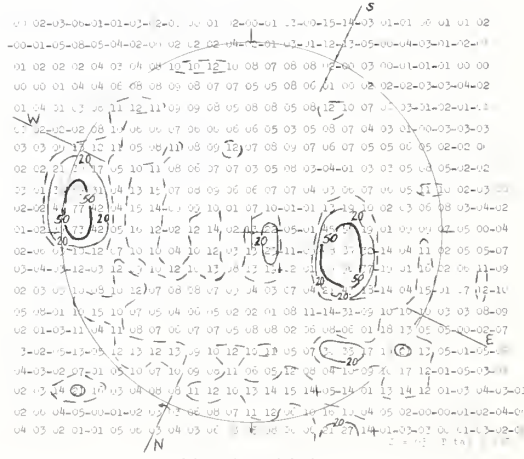

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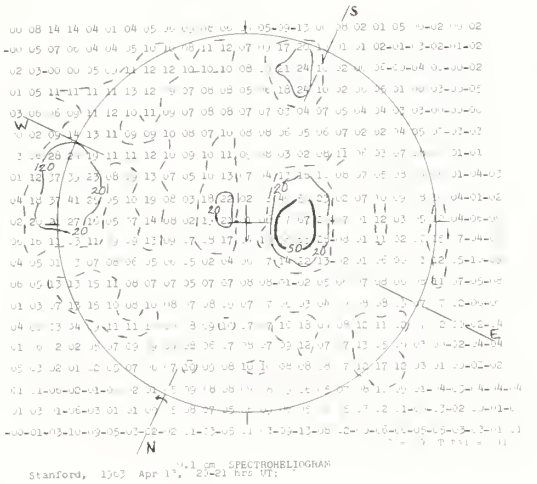
SOLAR RADIO EMISSION SPECTROHELIOGRAMS

STANFORD

APRIL 1963

9.1 cm



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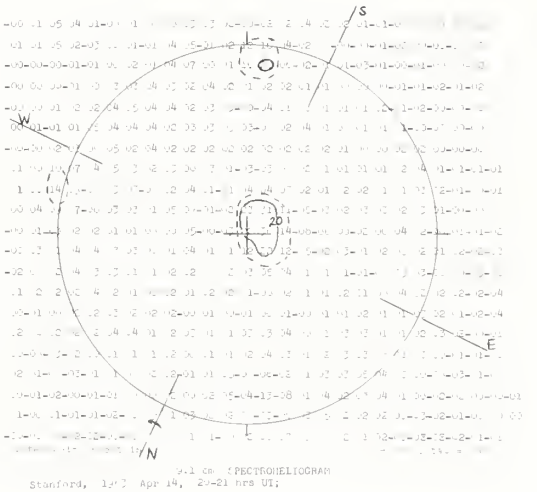

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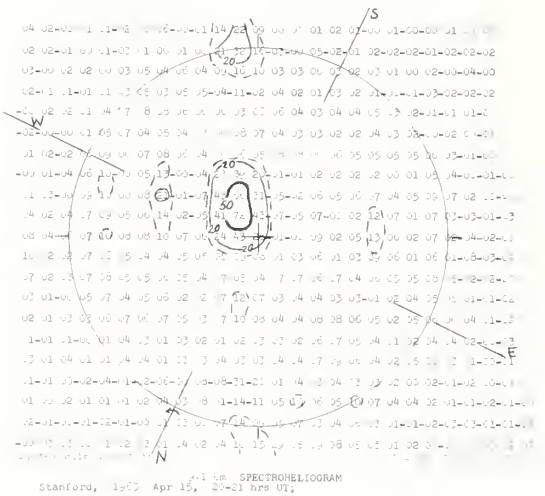

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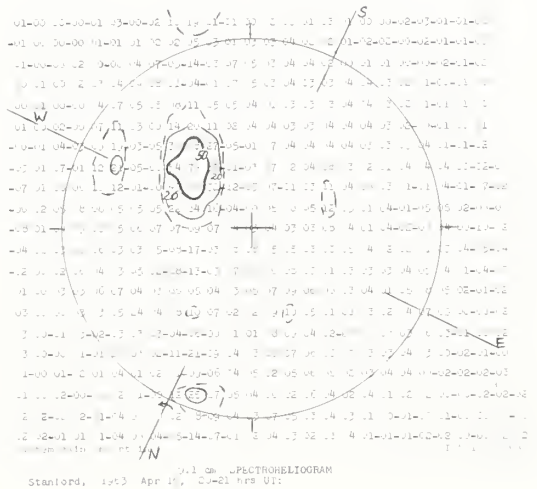

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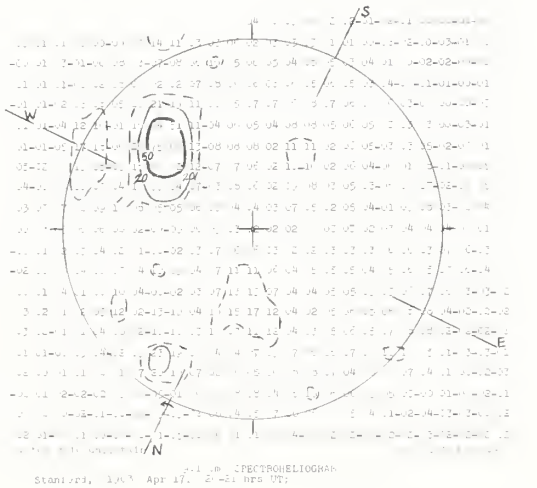

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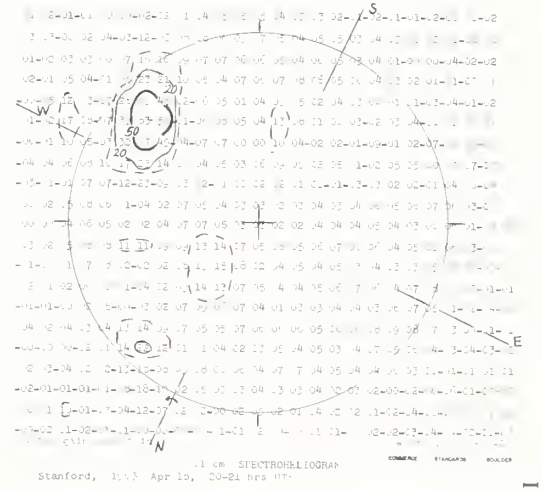

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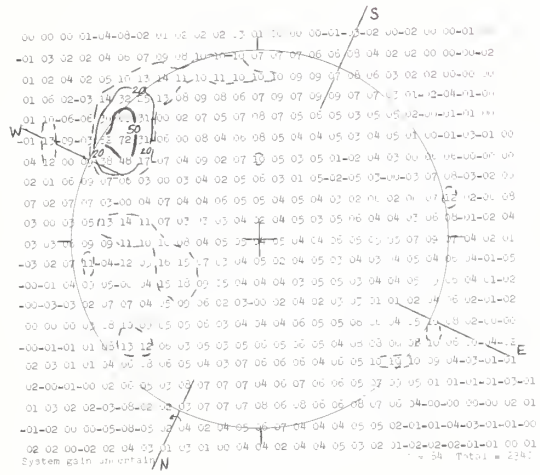
SOLAR RADIO EMISSION SPECTROHELIOGRAMS

APRIL 1963

STANFORD

9.1 cm



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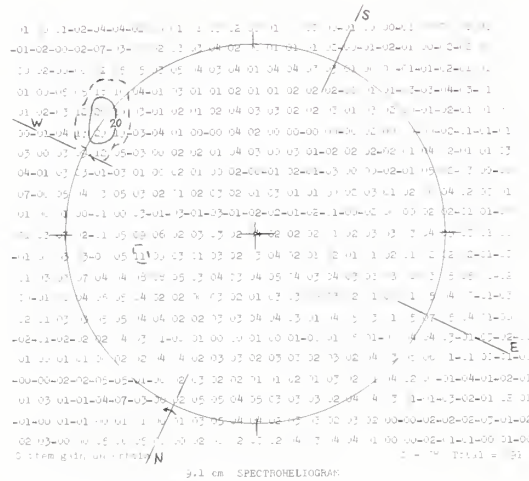

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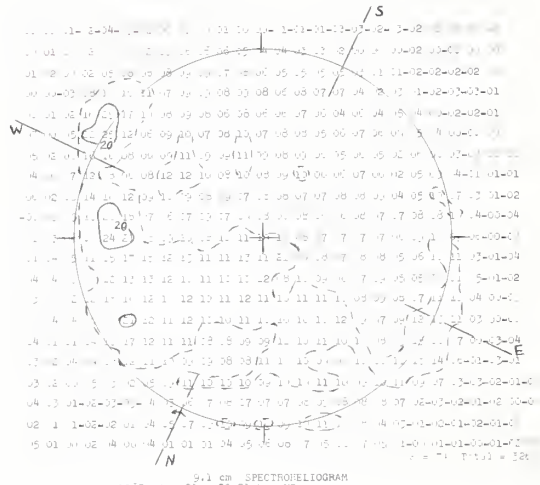

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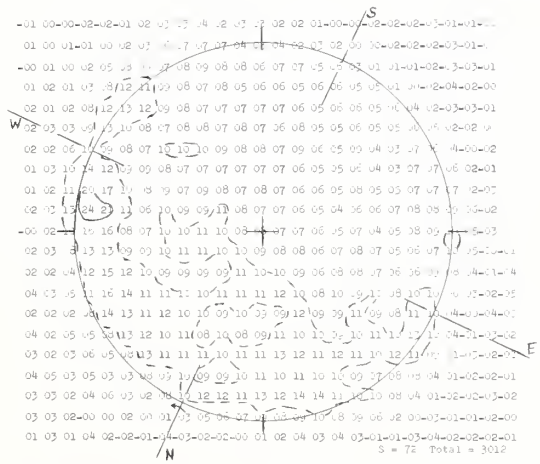

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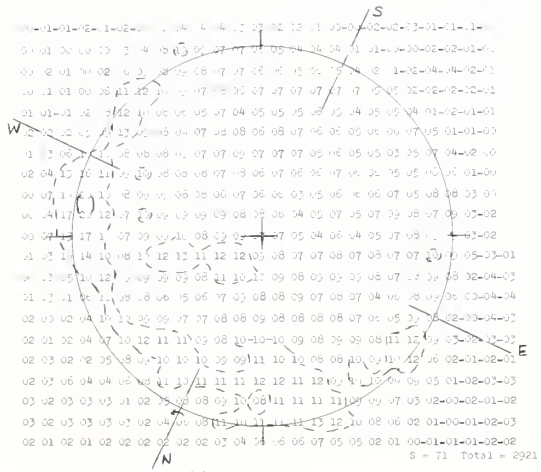
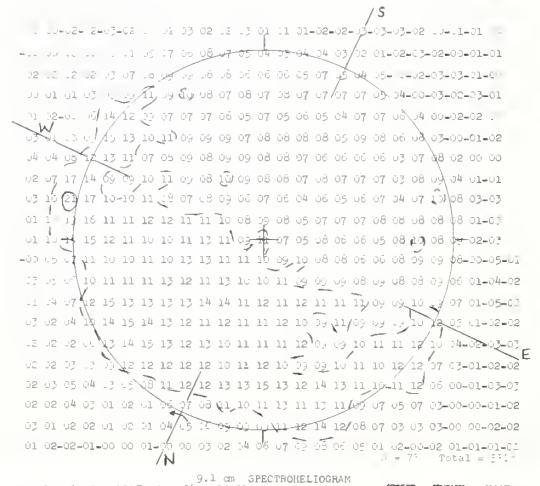


9.1 cm SPECTROHELIOGRAM
Stanford, 1963 Apr 23, 20-21 hrs UT;



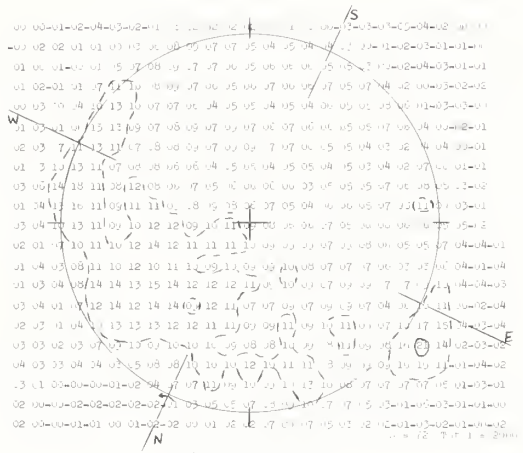
9.1 cm SPECTROHELIOGRAM
Stanford, 1963 Apr 24, 20-21 hrs UT;

STANFORD

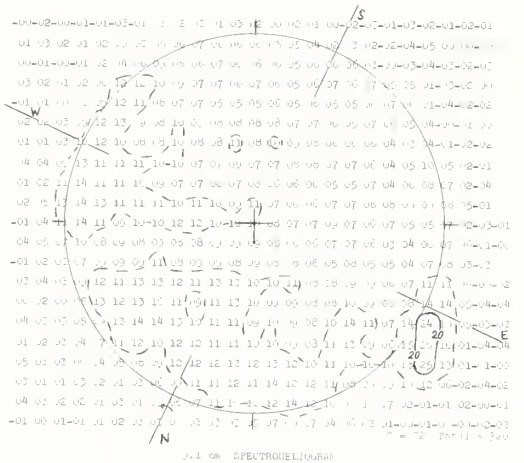
SOLAR RADIO EMISSION SPECTROHELIOGRAMS

9.1 cm

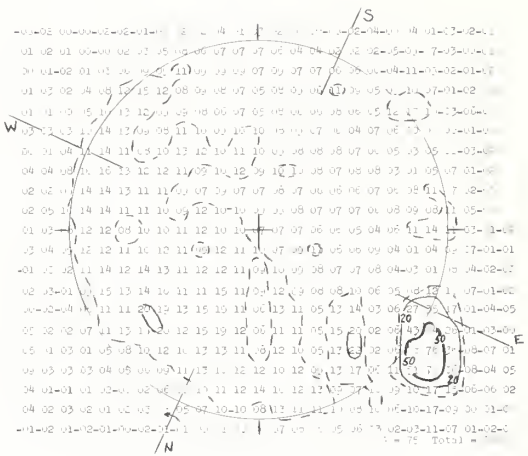
APRIL 1963



9.1 cm SPECTROHELIOGRAM
Stanford, 1963 Apr 25, 20-21 hrs UT;



9.1 cm SPECTROHELIOGRAM
Stanford, 1963 Apr 26, 20-21 hrs UT;



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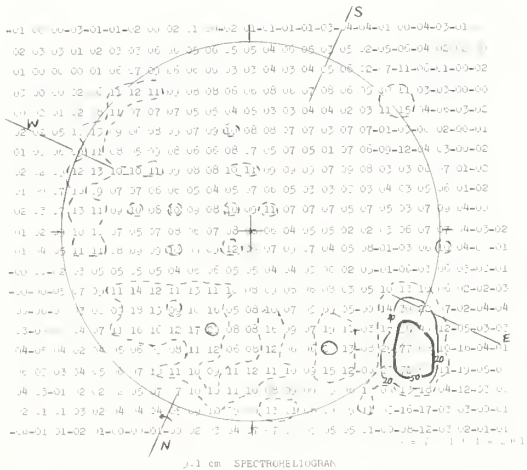
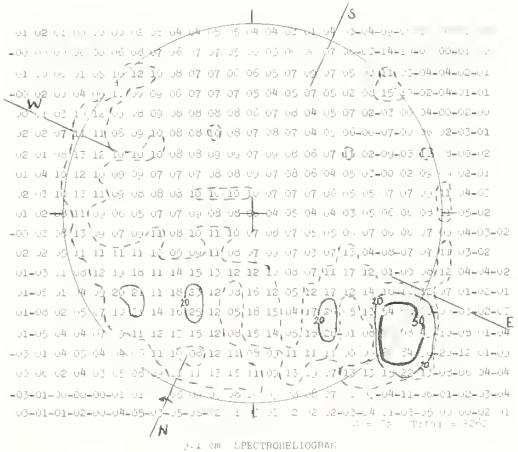
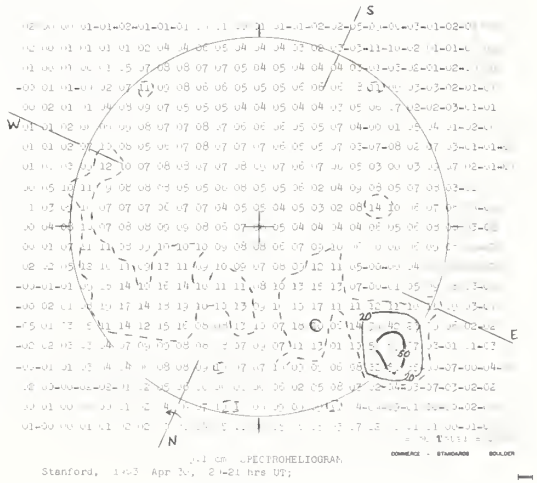


9.1 cm SPECTROHELIOGRAM
Stanford, 1963 Apr 28, 20-21 hrs UT;



9.1 cm SPECTROHELIOGRAM
Stanford, 1963 Apr 29, 20-21 hrs UT;



9.1 cm SPECTROHELIOGRAM
Stanford, 1963 Apr 30, 20-21 hrs UT;

IVan

COSMIC RAY INDICES

(Climax Neutron Monitor)

IGC Station B 305

MARCH 1963

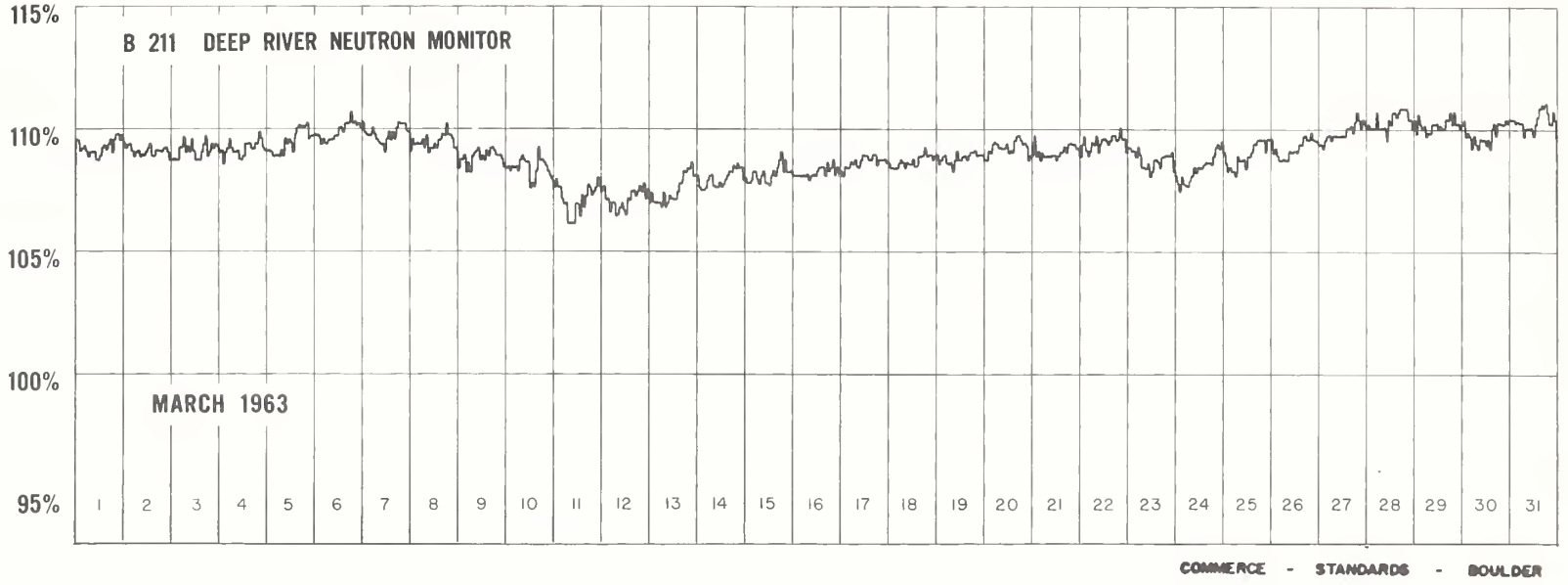
Mar. 1963	Daily average counts/hr *	Mar. 1963	Daily average counts/hr *
1	3201.1	16	3167.8
2	3183.3	17	3166.6
3	3190.6	18	3173.4
4	3196.3	19	3171.8
5	3190.6	20	3174.3
6	3200.5	21	3165.2
7	3200.3	22	3174.9
8	3198.2	23	3165.9
9	3167.8	24	3159.9
10	3178.5	25	3167.2
11	3145.2	26	3175.5
12	3143.1	27	3188.0
13	3135.9	28	3194.6
14	3133.0	29	3196.8
15	3156.5	30	3196.2
		31	3208.8

COMMERCE - STANDARDS - BOULDER

*Scaling Factor 128

COSMIC RAY INDICES

(Pressure Corrected Hourly Totals)

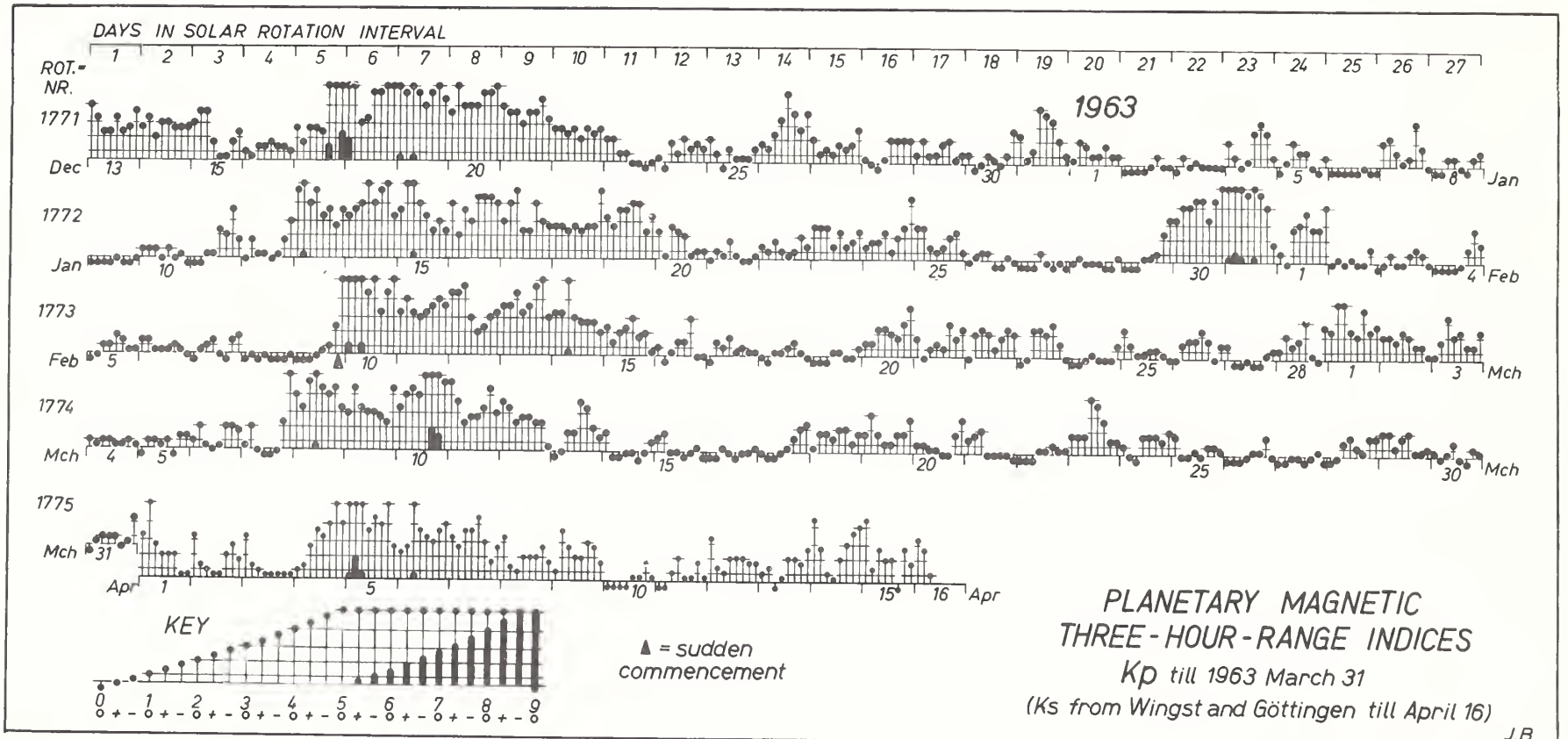


GEOMAGNETIC ACTIVITY INDICES

MARCH 1963

Mar. 1963	C	Values Kp — Three hour Gr. interval 1 2 3 4	5 6 7 8	Sum	Ap	Final Selected Days
1	0.8	2+ 4o 4o 2+	2o 4- 2+ 3-	23+	15	Five
2	0.2	2o 2o 2- 2+	2o 1+ 1+ 1-	13+	6	Quiet
3	0.6	1- 2- 3+ 2o	2+ 1+ 1+ 2+	15o	8	14
4	0.0	1o 1- 1o 1o	1- 1- 1o 1-	7-	4	16
5	0.2	0o 1o 1o 1-	1o 0o 1+ 1+	6+	3	22
						26
6	0.2	1o 2o 1- 0+	1- 2o 2o 2-	10+	5	27
7	0.9	1- 2o 0+ 0o	0o 0+ 2+ 5o	11-	9	
8	1.4	4o 3+ 5- 5+	4+ 4o 4+ 3+	33+	31	
9	1.1	3o 4+ 3+ 3o	3o 3- 2+ 4+	26o	18	
10	1.6	3+ 4o 4+ 4o	5o 6+ 6o 5-	38-	48	
11	1.1	5- 4- 2+ 3-	3- 3+ 4+ 3o	27-	20	Five
12	0.6	4- 3+ 2+ 3-	3- 2+ 2+ 1-	20o	12	Disturbed
13	0.6	0o 0+ 2- 2-	4- 3+ 2o 1+	14o	8	1
14	0.0	2- 0o 0o 0+	0+ 0o 0+ 1o	4-	2	8
15	0.0	1+ 2- 0+ 0+	0o 0+ 1- 0o	5-	2	9
						10
16	0.0	0o 0o 1- 0+	0o 0+ 0+ 1-	2+	2	11
17	0.5	0+ 0o 0o 0+	1- 1+ 2o 2+	7o	4	
18	0.6	1- 2- 2- 1+	2o 2o 1o 2-	12o	6	
19	0.6	2- 3o 2- 1o	1o 2- 2- 3-	14+	7	
20	0.3	1o 1o 1- 1-	0+ 0+ 2- 3-	8+	4	
21	0.1	1+ 2- 2o 0+	0+ 0+ 0+ 0o	6+	3	Ten
22	0.1	0o 0o 0o 1-	1- 1o 1- 1-	4-	2	Quiet
23	0.8	2- 2- 2- 4o	4- 3- 1+ 1+	18o	11	4
24	0.2	1o 0+ 0o 2-	2- 2- 1+ 2o	10-	4	5
25	0.1	2- 0+ 0+ 1-	0+ 1o 1o 1-	6o	3	14
						15
26	0.1	0o 0o 0o 0+	1- 1- 2- 0+	4-	2	16
27	0.0	0o 0o 0+ 0+	0o 0+ 1- 0o	2-	1	22
28	0.2	0o 0+ 1+ 2-	1o 1- 2- 2-	8+	4	25
29	0.2	2o 2o 1o 2-	2o 1- 1- 1o	11o	5	26
30	0.1	1- 0+ 1- 1+	0+ 0o 1o 1-	5o	3	27
31	0.4	0o 1- 1o 1o	1o 0+ 1- 2+	7o	4	30
Mean:	0.44			Mean:	8	

COMMERCE - STANDARDS - BOULDER -



COMMERCE - STANDARDS - BOULDER

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

MARCH 1963

NORTH ATLANTIC

MARCH 1963	NORTH ATLANTIC 6-HOURLY QUALITY FIGURES				SHORT-TERM FORECASTS ISSUED ABOUT ONE HOUR IN ADVANCE OF				WHOLE DAY INDEX	ADVANCE FORECASTS (J REPORTS) FOR WHOLE DAY, ISSUED IN ADVANCE BY				GEOMAGNETIC K_{FR}	
	00 TO 06	06 TO 12	12 TO 18	18 TO 24	00	06	12	18		1-7 DAYS FINAL J_S	1-7 DAYS SOW J	1-3 DAYS	1-7 DAYS	HALF (1)	DAY (2)
01	5-	5_0	6+	6-	6	4	5	5	5+	6	6			3	2
02	5_0	5-	6+	6-	5	5	6	6	5+	6	6			2	2
03	6-	5+	6_0	6_0	5	5	6	6	6-	6	6			2	2
04	5_0	5_0	6+	6_0	6	5	6	6	6-	6	6			1	1
05	5_0	6-	6+	6-	5	5	6	6	6-	6	6			1	1
06	6-	6-	6+	6_0	5	5	6	5	6_0	6	6			1	1
07	6-	6_0	6+	6-	5	6	6	6	6_0	6	6			1	2
08	5_0	5_0	5+	5+	5	5	6	5	5_0	5	5			(4)	(4)
09	5-	4-	6_0	5+	4	4	6	5	5-	4	4			3	3
10	5-	3+	5_0	5-	4	4	6	5	(4+)	4	4			(4)	(5)
11	4+	3+	6_0	5-	4	3	6	5	(4+)	4	4			(4)	3
12	3+	2+	5+	5-	4	3	6	5	(4-)	4	4			3	2
13	4+	3-	5+	6-	4	3	6	5	(4+)	5	5			1	3
14	5-	4-	6-	6_0	5	4	6	6	5-	5	5			0	1
15	5+	4+	6_0	6_0	5	4	6	6	5+	5	5			1	0
16	6-	5-	6_0	6_0	6	5	6	6	6-	6	6			0	1
17	6-	5-	6+	6_0	6	5	6	6	6-	6	6			0	2
18	6-	4+	6-	5+	6	5	6	6	5_0	6	6			2	1
19	5_0	4+	6-	6-	6	4	6	5	5_0	6	6			1	2
20	5+	5-	6+	6-	5	4	6	6	6-	6	6			1	1
21	5_0	4-	6+	6+	5	5	6	6	5_0	6	6			1	1
22	5_0	4+	6_0	6+	5	4	6	6	5_0	6	6			0	1
23	6-	5+	7-	6+	5	5	6	5	6_0	6	6			2	2
24	5+	5-	6_0	6_0	5	5	6	6	6-	6	6			1	2
25	6-	5_0	7-	6+	6	5	6	6	6_0	6	6			1	1
26	6-	5_0	6+	6-	6	5	6	6	6-	6	6			0	1
27	6-	5-	6+	6_0	6	5	7	6	6-	6	6			0	0
28	6-	5_0	6+	6_0	6	5	6	6	6-	6	6			1	2
29	5+	5_0	7-	6-	6	5	6	6	6_0	6	6			2	1
30	6-	5_0	7-	6+	6	5	7	6	6_0	6	6			1	1
31	5+	5-	7-	6_0	6	5	7	6	6-	6	6			1	1
Score: Quiet Periods				P	17	16	22	25		20	20				
				S	11	4	9	6		7	7				
				U	0	0	0	0		0	0				
				F	0	0	0	0		0	0				
Disturbed Periods				P	2	7	0	0		3	3				
				S	1	4	0	0		1	1				
				U	0	0	0	0		0	0				
				F	0	0	0	0		0	0				

NORTH PACIFIC

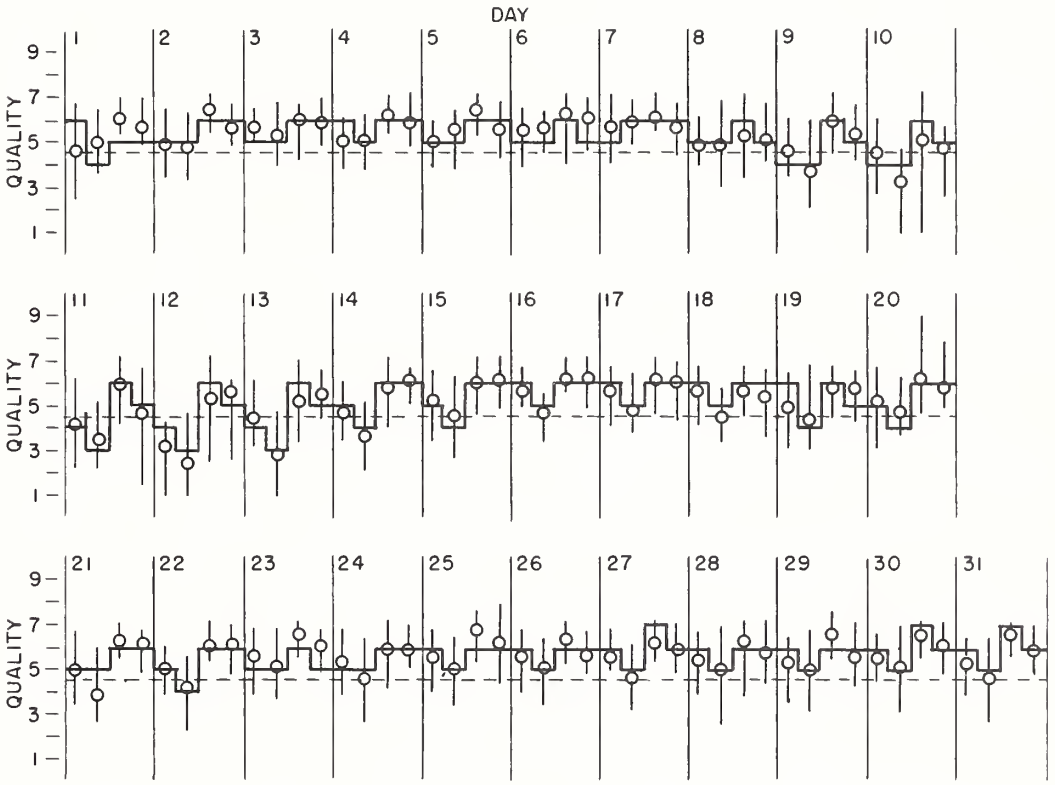
MARCH 1963	NORTH PACIFIC 12-HOURLY QUALITY FIGURES		SHORT-TERM FORECASTS ISSUED AT		WHOLE DAY INDEX	ADVANCE FORECASTS (J_P REPORTS) FOR WHOLE DAY, ISSUED IN ADVANCE BY				GEOMAGNETIC K_{SI}	
	0700 TO 1900	1900 TO 0700	0600	1800		1-7 DAYS FINAL J_{PS}	1-7 DAYS SOW J_P	1-3 DAYS	1-7 DAYS	HALF (1)	DAY (2)
01	6	7	6	6	7	6	6			3	2
02	6	7	6	6	6	6	6			2	1
03	6	7	6	7	7	6	6			2	2
04	6	7	6	7	6	6	6			1	0
05	6	7	6	7	7	6	6			1	0
06	5	7	6	7	6	6	6			0	1
07	7	7	5	7	7	5	5			0	2
08	6	7	5	5	6	5	5			(4)	3
09	6	7	5	6	6	4	4			(4)	2
10	5	7	5	4	5	4	4			(4)	(4)
11	5	6	4	6	6	4	4			3	2
12	6	6	4	7	6	4	4			3	2
13	6	6	5	7	6	5	5			1	2
14	5	6	6	7	6	6	6			0	0
15	6	6	5	7	6	6	6			0	0
16	6	7	6	7	6	6	6			0	0
17	6	7	6	7	6	6	6			0	2
18	6	7	5	7	6	6	6			2	1
19	6	7	5	7	7	6	6			2	1
20	7	7	6	7	7	6	6			1	1
21	6	7	6	7	7	6	6			2	0
22	6	7	7	7	7	6	6			0	0
23	6	7	6	6	7	6	6			2	2
24	6	7	6	7	7	6	6			1	1
25	6	7	6	7	6	6	6			0	0
26	7	7	6	7	7	6	6			0	0
27	6	7	6	7	7	6	6			0	0
28	7	7	6	7	7	6	6			1	1
29	7	7	6	7	7	6	6			1	1
30	6	7	6	7	7	6	6			1	0
31	6	7	6	7	7	6	6			0	1
Score: Quiet Periods	15		21			9					
	14		8			18					
	1		1			1					
	1		1			3					
Disturbed Periods	0		0			0					
	0		0			0					
	0		0			0					
	0		0			0					

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

NORTH ATLANTIC

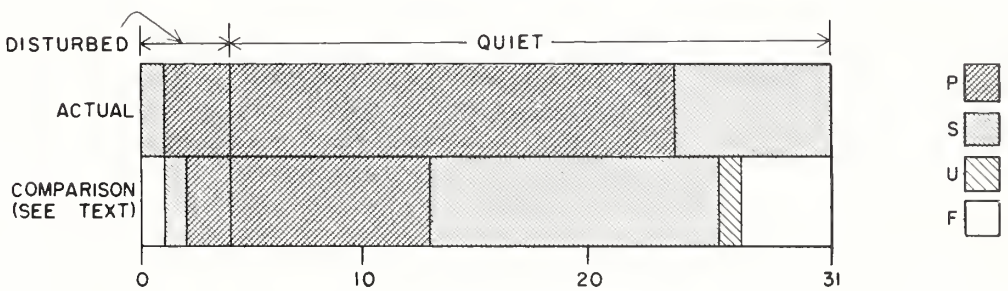
MARCH 1963

— Short-term forecast
o Quality figure
| Range of reports

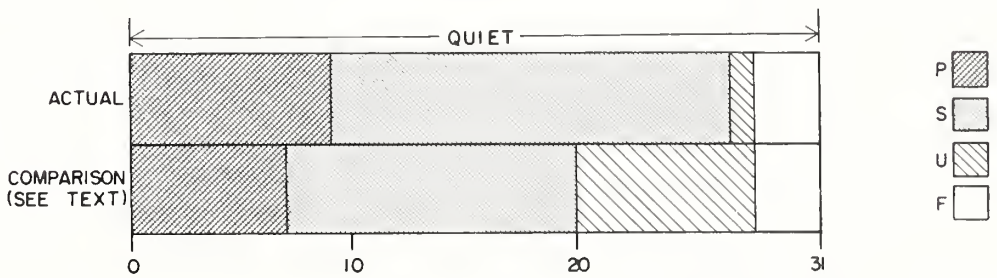


Outcome of advance forecasts--final estimates (1 to 7 days ahead).

NORTH ATLANTIC

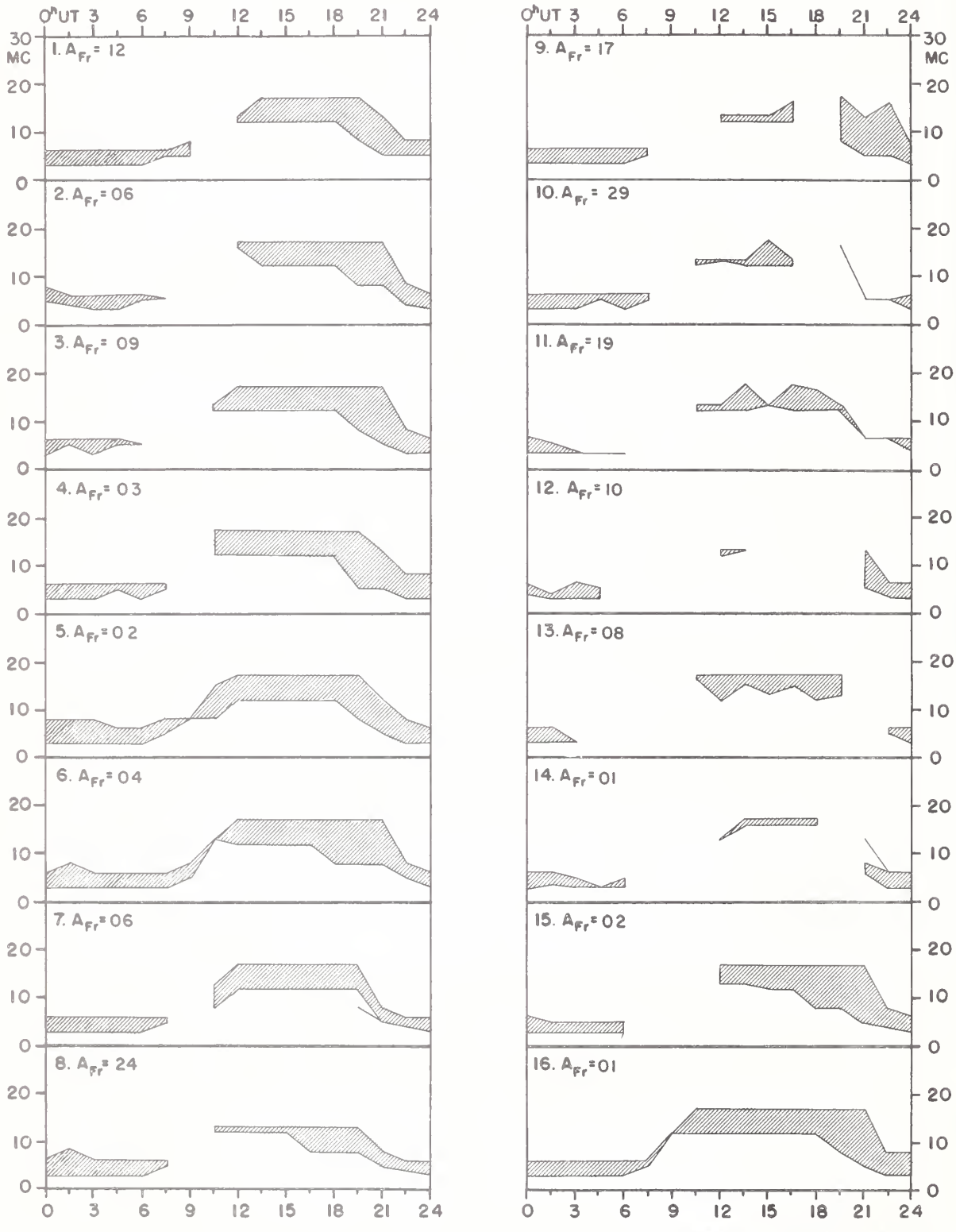


NORTH PACIFIC

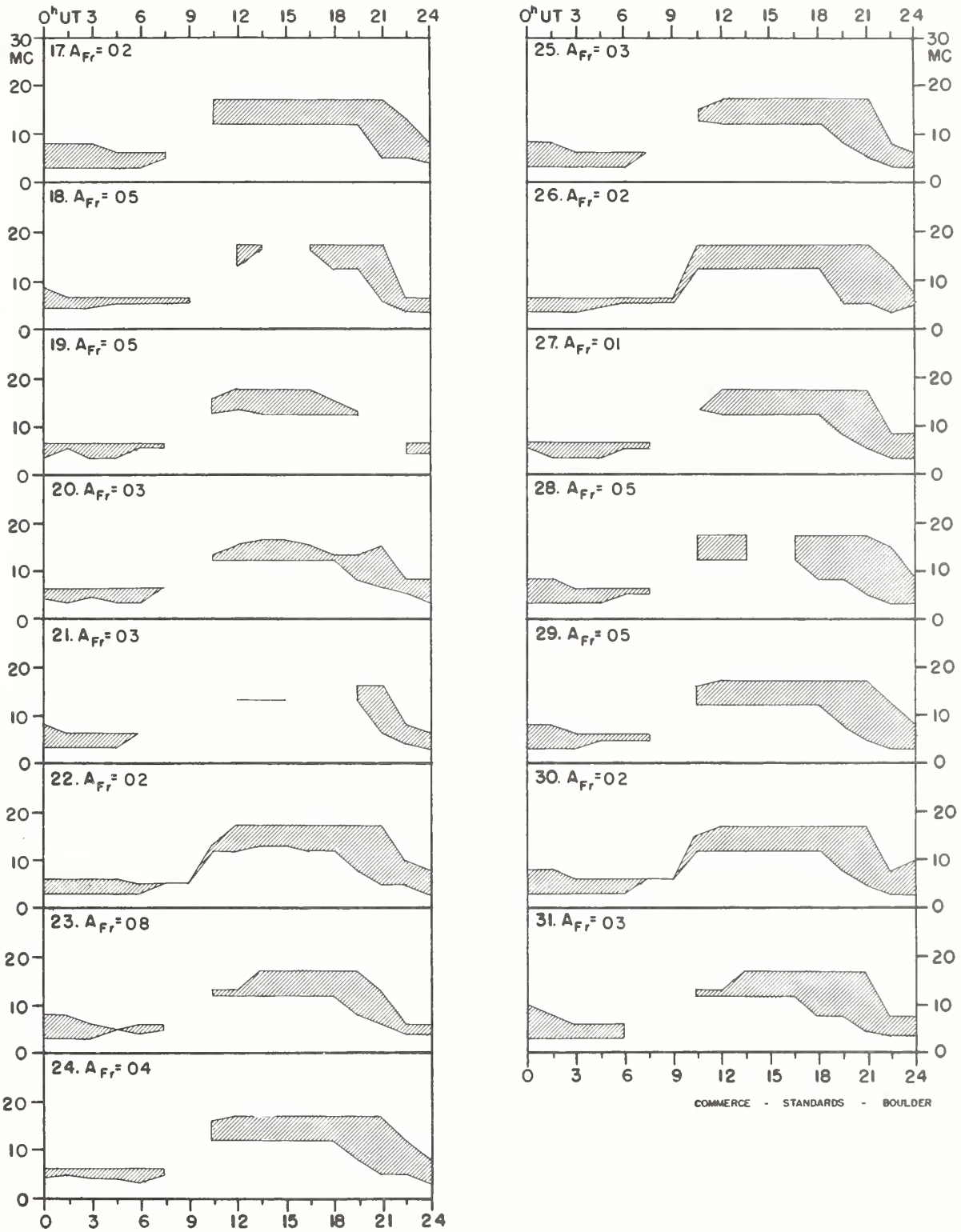


USEFUL FREQUENCY RANGES -- NORTH ATLANTIC PATH

MARCH 1963



MARCH 1963



Adapted from Observations by Deutsches Bundespost

ALERT PERIODS AND SPECIAL WORLD INTERVALS

INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

APRIL 1963

Issued April 1963 Day/Time U.T.	Advance Geophysical Alert	No.	World-Wide Geophysical Alert	Special World Intervals
15/1745	McMath, Solar Flare, One Plus 15/1618Z			
18/0117	Climax, Solar Flare, One Plus 17/1908Z			
19/1910	Sac Peak, Solar Flare, One Plus 19/1800Z			

COMMERCE - STANDARDS - BOULDER